

Special Issue of the "Fruit World"

Registered at the General Post Office, Melbourne,
for transmission by post as a Newspaper.

The **FRUIT WORLD** ANNUAL

JANUARY, 1940

Special Features

SPRAYING

PACKING

MANURING

MARKETING

DRIED AND

CANNED FRUITS

COLD STORAGE

Etc., Etc.

REVIEW OF THE INDUSTRY
WITH STATISTICS



A BOOK OF DAILY REFERENCE

For Growers of Apples, Pears, Vine, Citrus and Stone Fruits — Exporters, Marketgrowers, etc.

PUBLISHED BY THE FRUIT WORLD PTY. LTD.

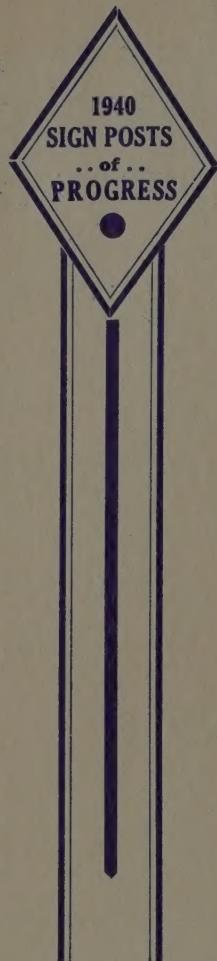
Established 41 Years

Registered Office: 8-12 ORR STREET (off 78 Victoria Street), MELBOURNE, Victoria.

Postal Address: Box 1944, G.P.O., Melbourne. (Tel., F 2656, two lines.)

And at 439 Kent Street, Sydney. (Tel., M 6751, three lines.)

COPYRIGHT.



Harvey Products

*For the Orchardist, Citrus
Grower and Vigneron*

DEHYDRATORS—For Drying Sultanas, Apples, Prunes, Peaches, Apricots, etc.
 FRUIT GRADERS—Rotary Bins and Standard Bins for Apple, Peach, Apricot and Mixed Fruit, Pear and Lemon Graders, Citrus Graders, Prune Graders.
 CITRUS PROCESSING EQUIPMENT—Dry and Wet (Hot or Cold).
 APPLE WASHERS AND DRYERS.
 APPLE AND CITRUS WIPERS.
 PEACH AND APRICOT GRADER SORTERS.
 DISC PLOWS—Orchard and Field (Light and Heavy).
 PETTY DISC ORCHARD STRIPPING PLOW.
 MOULDBOARD PLOWS—Patent Shifting Handle Plows, Orchard and Vineyard Plows, Single and Multi-Furrow Plows.
 TRACTOR PLOWS—Tractor Mouldboard Plows, Patent Power Lift Orchard and Field Plows, Tractor Disc Plows, Patent Power Lift Lancia Orchard Disc Plows, Stump Jump Disc Plows.
 ROAD PLOWS—Single-Furrow and Multi-Furrow Tractor Plows.
 REVERSIBLE HILLSIDE DISC PLOWS.
 REVERSIBLE HILLSIDE MOULDBOARD PLOWS—Single Furrow.
 SUBSOILERS AND DELVERS—Horse and Tractor.
 MOLEDRAINERS—Horse and Tractor.
 DISC CULTIVATORS—One-Way Orchard Disc Cultivators (Horse and Tractor). 2-Plate Plowing Gang, 2-Way Extension and Reversible Cultivators (Horse and Tractor). Tandem Disc Cultivators (Horse and Tractor).
 CITRUS DISC CULTIVATORS—with Beetle Back Hood.
 OFFSET (PATENT) TRACTOR TANDEM DISC CULTIVATORS.
 OFFSET HORSE DRAWN TANDEM DISC CULTIVATORS.
 SPRING & RIGID TYNE CULTIVATORS—Orchard and Field. (Horse & Tractor).
 SPRING TYNE ORCHARD AND CITRUS CULTIVATORS.
 NURSERY CULTIVATORS AND SCUFFLERS.
 DRAG HARROWS—Orchard and Field. Grass Harrows.
 ORCHARD HARNESS—Single and Double.
 GRAPE AND BERRY HOES.
 POTTS' REVERSIBLE VINE HOE AND REVERSIBLE VINE PLOW.
 PACKING HOUSE EQUIPMENT—Cool-Store Trucks, Trolleys, Gravity Conveyor, Paper Holders, etc.
 TRACTOR ATTACHMENTS—Sub Frame Lift, Plow, Cultivator (Rigid, Spring Tyne and Disc).
 TOBACCO PLANTERS, TOBACCO CULTIVATORS.

DANIEL HARVEY LIMITED
 Box Hill, Victoria, Australia, WX 1025

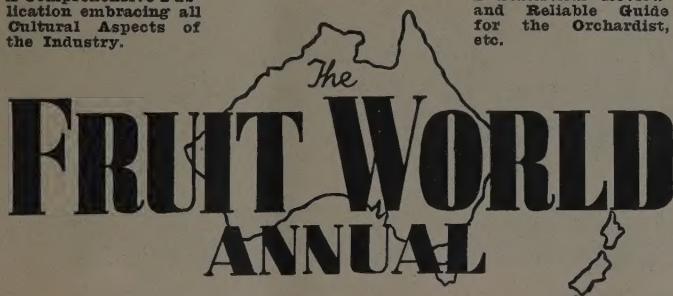
Interstate Representatives:

N.S.W.—Tractors & Machinery Pty. Ltd., 131 Palmer St., Sydney.
 S.A.—Silbert, Sharp & Bishop, Bunder St., East Adelaide.
 W.A.—Paterson & Co. Ltd., St. Georges Terrace, Perth.

Southern Tasmania — Southern Implement & Machinery Coy., Market Place, Hobart.
 Queensland—Buzacott (Queensland) Ltd., 443 Adelaide St., Brisbane.
 S.A.—Cole & Woodham, Box 12, Renmark.

A Comprehensive Publication embracing all Cultural Aspects of the Industry.

A Statistical Review and Reliable Guide for the Orchardist, etc.



The FRUIT WORLD ANNUAL

Published by the Fruit World Pty. Ltd. — Established 40 Years.

Head Office :

8-12 Orr Street, Melbourne

(off 78 Victoria Street)

Phone: F 2656 (2 lines).

and at

439 Kent Street, Sydney

Phone: M 6751 (3 lines).

Editor: R. E. BOARDMAN, A.F.I.A., F.A.I.S.

Advertising Manager: - - E. H. WRAGG.

EDITORIAL

MANY THINGS have happened since we last had contact with our readers by means of the "Fruit World Annual." The biggest thing, of course, is the declaration of war, together with all the problems which that calamity has brought. However, both the dried fruits and canned fruits sections of the industry are enjoying a measure of stabilization. The citrus industry has also a reasonable prospect of satisfactorily dealing with its crops.

It is in the Apple and Pear sections of the industry that the problems have loomed so largely. With the practical cessation of overseas exports the necessity has been thrust upon the industry for getting its products into consumption locally.

For several months prior to the outbreak of war the Apple and Pear Organisation Board, created by Act of Parliament, had been steadily developing its plans for handling the 1940 crop. However, while their projected plans for export are not capable of being attended to, the fact of the Board being in existence made it possible for a prompt approach to the Government to deal with the very definite crisis which had arisen.

Details of the Apple and Pear Acquisition proposals have been fully published, and all plans are now taking shape—operating by means of State committees and District committees in the several States. These District and State committees are arranging all the details associated with cases, cold storage, tabulation of varieties, assessment of crops, payments to growers and publicity.

It is quite certain that, as far as humanly possible, all arrangements will be completed;

growers and all concerned with the industry may be assured that no effort will be spared to secure the best possible returns. Taking the long view, it is certain that the forthcoming publicity efforts have all the possibilities for permanent good. By co-operation with the medical and dental professions, nutrition and health authorities, the good story of fruit and health will be driven home, thus to bring about a better understanding amongst the general public of the health and health qualities of fruit.

If Australians can be induced to increase their consumption of fruit there will be better health among the community at large, and there will be reduction in the cost of living.

In this connection due importance will be laid on the value of fruit drinks. At the present time, drinks are offered to the public which are only masquerading to their genuine fruit contents. This needs to be corrected—by legislation if necessary.

THE WORLD SITUATION.

The war is demanding great sacrifices on everyone's part. It is a sad commentary on our present civilization that war should be necessary to settle international problems. But does war settle these problems, or does it create new ones?

As in the past, however, Australia and New Zealand have rallied to the call of the Motherland and will share Empire burdens. Let us hope the day will soon dawn when the brotherhood of man, operating democratically in a comity of nations, will be a reality, and that the song of angels will be the song of earth: "Peace on Earth Goodwill to Men."

Horticultural Research.

It will be noted from reports of Control Boards and other authorities, that great stress is laid on the necessity for continuing research into horticultural problems. Shining examples are given regarding the value of this form of research—larger

and better crops have been produced at lower cost. The attention of all research authorities is directed to this matter, as the providing of sufficient funds to carry out horticultural research is a matter of national importance—affecting not only the producers, but the general taxpayer as well.

CONTENTS

INDEX TO ADVERTISERS

	Page		Page	
Australian Cement Ltd.	22	Harvey, Daniel, Ltd.	Cover ii.	Poultry Breeders' Guide
Australasian Jam Co. Pty. Ltd.	36	Hull, Port of	50	Producers' Co-op. Distrib. Scty. Ltd.
Bisset, John	69	Jenkins, John	66	Rega Products
Booth, Frank, & Sons Pty. Ltd.	65	Leggo, Victor, & Farmers Ltd.	16	Rosen, L. P., & Son
Brunning, John, & Sons	8	Lister, Geo., Pty. Ltd.	72	Russell Burrows Pty. Ltd.
Budge, James, Pty. Ltd.	48	Lucas, D. S., & Co.	60	Schumacher Mill Furnishing Works
Buzacott-Wolsley Ltd.	18	Malcolm Moore Ltd.	34	Shepparton Fruit Preserving Co.
Chilean Nitrate of Soda	28	McKay, H. V., Massey Harris Pty.	8	Slater, Jas., Pty. Ltd.
Chilton, F.	66	Ltd.	60	Stott, T., & Sons
Cooper, A. J.	56	McRostie & Growers Pty. Ltd.	17	Titan Nail & Wire Pty. Ltd.
Cooper, William, & Nephews (Aust.)		Moffat-Virtue Ltd.	65	Vacuum Oil Co. Pty. Ltd.
Ltd.	10	Moulden, E. T., & Son Pty. Ltd.	68	Werner, R., & Co. Pty. Ltd.
Davis, J., Pty. Ltd.	72	Musgrave, W., & Son	26	Westralian Farmers Ltd.
Dewey & Almy Pty. Ltd.	43	Nitrogen Fertilisers Pty. Ltd.	6	Wholesale Fruit Merchants' Assn. of
Electrolytic Refining & Smelting Co.		Nobelius, C. A., & Sons Pty. Ltd.	7	Vic.
of Aust. Ltd.	12	N.S.W. Chamber of Fruit and Veg.	70	Wicks, H. N.
Eyles, A. T.	2	Ind.	40	Wilson, H., Pty. Ltd.
"Fruit World & Market Grower"	68	Patrick, Jas., & Co. Ltd.	77	Woolf, G., & Sons Pty. Ltd.
Goodman, C. J.	6	Pitt, A. E.		Young, Tim, & Co. Pty. Ltd.

LEADING CITRUS GROWER

ALL VARIETIES CITRUS AVAILABLE FOR 1940 PLANTING.
GOVT. CO-OP. SELECTED BUDS USED.

Trees Available for March Planting

Book Early and Save Disappointment.

Packed and Despatched Anywhere.

All varieties Roses true to name available

A. T. EYLES

Fairmount Nurseries, Rydalmeré, N.S.W.

'Phone: UW 9037



An Important Primary Industry

Orchard and Vineyard Area and Production Figures

Comparative Figures Showing Extent of the Industry in all States

THE STATISTICS which follow give the complete picture of the Australian fruit industry. The figures were compiled by the Commonwealth Statistician and are for the year 1937-38—being the latest available at this stage.

We observe that New South Wales, with 14,714 acres under Bananas, has outdistanced Queensland (8,174 acres) as the chief producing State for Bananas. It will also be observed that Western Australia has now 246 acres under Bananas. Queensland is the chief producer of tropical fruits.

New South Wales is also by far the largest producer of Oranges.

Victoria has the largest area under Apples, 28,907 acres; Tasmania comes next with 24,441 acres. With regard to production, however, the figures show Tasmania as producing 4,792,000 bushels against Victoria, 2,454,471 bushels. The improvements in the Tasmanian pack of Apples has been of great value in winning a high reputation on interstate and Overseas markets. The total crop of Apples in Australia for the year under review was 10,958,868 bushels. Victoria has the largest area under Pears—14,117 acres as compared with New South Wales 7,750 acres, and produces 1,527,032 bushels compared with 455,610 bushels from New South Wales.

South Australia has the largest acreage under vines, a considerable portion of which is used for wine-making. Victoria leads in the production of dried vine fruits. Western Australia produces a wide range of fruits and has established a good name for high quality export Apples.

Regarding Passionfruit—of the 2,151 acres in the Commonwealth, New South Wales leads with 1,093 acres, followed by Victoria with 698 acres, and 284 acres in Queensland. Queensland is the principal producer of Pineapples, with 6,549 acres, from which were produced 1,361,493 doz. in the period under review.

VINEYARDS.

With regard to vineyards, it will be noted from the subjoined figures that South Australia has the largest area under cultivation (57,414 acres) followed by Victoria with 41,883 acres.

South Australia produces by far the most wine in the Commonwealth. Out of a total of 20,430,031 gallons produced in 1937-38, no less than 15,888,878 gallons came from S. Australia.

The statistics are as follow:—

Vineyards—Area and Production, 1937-38.

	Area.	Production.			
		Tons.	Table	Grapes.	Raisins.
	Acres.	Grapes.	Raisins.	Currants.	Wine, Gallons.
N.S.W.	16,950	5,076	6,139	1,155	2,690,315
Vic.	41,883	4,372	48,504	8,948	1,433,637
Qld.	2,716	2,259	—	—	16,909
S. Aust.	57,414	657	16,609	9,367	15,888,878
W.A.	6,208	2,918	725	1,887	400,292
	125,171	15,282	71,977	21,357	20,430,031

In the same period there were 49,746 gallons of wine imported to the value of £48,516. The quantity exported was 8,898,457 gallons, valued at £944,676. The quantity of Raisins and Currants exported was 62,756 tons, valued at £2,539,593.

Statistics Showing Area and Production of the Australian Fruit Industry

TABLE 1.—AREA UNDER FRUIT, ALL STATES, SEASON 1937-38.

Fruit.	N.S.W. Acres.	Vic. Acres.	Q'land. Acres.	S.Aust. Acres.	W.A. Acres.	Tas. Acres.	Territory. Acres.	Australian Capital Bearing and Non-bearing.	Total. Acres.
Apples	18,173	28,907	5,629	10,507	12,933	24,441	57	..	100,647
Apricots	2,003	4,472	282	3,167	684	1,348	6	..	11,962
Bananas	14,714	—	8,174	—	246	—	—	..	23,134
Cherries	3,587	1,389	8	1,033	56	98	3	..	6,174
Citrus—									
Oranges—Washington									
Navel	7,852			3,098	3,053	—	—	..	
Other	12,250	4,570	4,324	1,482				..	40,914
Mandarins	4,117			(c)	168	—	—	..	
Lemons	2,818	1,655	396	436	505	—	—	..	5,810
Other	580	(b)	13	51	48	—	—	..	692
Coconuts	—	—	360	—	—	—	—	..	360
Custard Apples	3	—	299	—	—	—	—	..	302
Figs	284	364	35	434	406	—	1	..	1,524
Mangoes	7	—	554	—	—	—	—	..	561
Nectarines	647	229	54	297	235	—	2	..	1,464
Nuts	906	580	102	2,558	350	—	3	..	4,499
Olives	5	30	—	292	—	—	—	..	327
Passionfruit	1,093	698	284	8	68	—	—	..	2,151
Pineapples	229	—	6,549	—	11	—	—	..	6,789
Papaws	8	—	831	—	—	—	—	..	839
Peaches	7,750	14,117	1,330	1,559	865	80	4	..	25,705
Pears	4,013	12,623	319	1,795	1,029	2,370	5	..	22,154
Persimmons	154	5	1	1	—	—	—	..	161
Plums	2,705	3,420	1,213	2,454	1,107	466	11	..	11,376
Prunes	2,793	557	—	(d)	—	—	1	..	3,351
Quinces	530	714	12	230	93	62	5	..	1,646
Raspberries	(e)	162	—	114	—	1,476	—	..	1,752
Strawberries	13	319	186	210	28	275	—	..	1,031
Other Small, N.E.I.	8	231	8	90	4	1,046	—	..	1,387
All Other, N.E.I. (a)	51	25	173	58	87	15	—	..	409
Total	87,293	75,067	31,136	29,874	21,976	31,677	98	..	277,121

(a) Includes fruit grown for private use, (b) Included with Oranges, etc., (c) Included with Other Oranges,
(d) Included with Plums, (e) Not available.

Citrus Trees Bud Selected

WORKED ON ORANGE, TRIFOLIATA AND LEMON STOCKS TO SUIT THE DIFFERENT SOILS.

SUMMER FRUIT AND ROSE PLANTS IN LARGE QUANTITY.

Expert Packing _____ Descriptive Catalogue FREE on Application.

We also Stock KUNDE SECATEURS, BUDDING and GRAFTING KNIVES.

L. P. ROSEN & SON, Fernhill Nurseries
Pennant Hills Road, Carlingford, New South Wales

ESTABLISHED 1901.

Phone: Epping 96; After Hours: Epping 58.

TABLE 2.—FRUIT PRODUCTION, ALL FRUITS, EACH STATE.

Fruit.	Unit of Quantity.	N.S.W.	Vic.	Qld.	S. Aus.	W.A.	Tas.	A.C.T.	Total.
Apples..	bushel	1,234,802	2,454,471	269,410	1,275,486	930,678	4,792,000	2,021	10,958,868
Apricots	"	197,846	409,417	13,912	511,452	61,388	140,500	321	1,334,836
Bananas	"	1,845,394	—	758,726	—	26,504	—	—	2,630,624
Cherries	"	140,493	41,987	255	46,065	692	3,000	35	232,527
Citrus—									
Oranges—									
Washington Navel	"	879,851	391,951	293,113	619,973	304,852	—	—	4,442,390
Other	"	1,141,910	282,231		182,282	(e) 14,429	—	—	
Mandarins	"	314,417	17,381						
Lemons	"	253,012	186,821	30,466	54,587	63,904	—	—	588,790
Other	"	64,409	1,007	578	6,623	2,264	—	—	74,881
Coconuts	dozen	—	—	(b)	—	—	—	—	(b)
Custard Apples	bushel	299	—	29,860	—	—	—	—	30,159
Figs	"	9,746	19,528	3,164	27,799	37,807	—	9	98,053
Mangoes	"	698	—	72,092	—	—	—	—	72,790
Nectarines	"	29,527	17,134	3,600	30,405	15,869	—	30	96,565
Nuts	lb.	422,464	263,528	10,594	1,278,256	62,733	—	50	2,037,625
Olives	cwt.	68	1,302	—	5,543	—	—	—	6,913
Passion Fruit	bushel	44,109	33,290	18,764	256	8,128	—	—	104,547
Pineapples	dozen	30,284	—	1,331,091	—	118	—	—	1,361,493
Papaws	"	696	—	177,573	—	—	—	—	178,269
Peaches	bushel	609,532	1,695,094	90,113	176,778	62,261	5,800	144	2,639,722
Pears	"	455,610	1,527,032	26,179	279,058	93,922	214,000	153	2,595,954
Persimmons	"	9,994	308	126	63	—	—	2	10,493
Plums	"	145,917	190,320	76,017	165,333	71,975	60,700	213	710,475
Prunes	"	307,632	58,967	—	(d)	—	—	8	366,607
Quinces	"	44,160	52,733	941	23,296	7,381	8,000	190	136,701
Raspberries	cwt.	2	3,166	—	2,976	—	58,607	—	64,751
Strawberries	"	221	6,711	4,163	3,089	673	8,661	—	23,518
Other Small, N.E.I.	"	82	8,012	72	3,122	(b) 44,715	—	—	56,003
All Other, N.E.I.	bushel	3,534	(b)	(b)	3,685	(b)	(b)	—	7,219



WINTER COLE PEAR TREES IN BLOSSOM IN A TASMANIAN ORCHARD.

TABLE 3.—YIELD PER ACRE (a) ALL FRUITS, EACH STATE, 1937-38.

		N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	A.C.T.
Apples	bushel	95.85	98.18	81.27	147.47	95.57	218.35	44.91
Apricots	"	113.90	115.98	42.76	180.41	103.35	120.39	80.25
Bananas	"	154.23	—	143.48	—	186.65	—	—
Cherries	"	45.38	49.51	85.00	76.90	23.07	39.47	17.50
Citrus—								
Oranges—								
Washington Nav. ls	"	131.83				214.52	118.07	—
Other	"	106.76		88.90		139.68	—	—
Mandarins	"	80.58				(c)	109.31	—
Lemons	"	114.33	156.60	133.62	144.79	146.91	—	—
Other	"	165.15		(b)	48.17	161.54	107.81	—
Coconuts	dozen	—	—	(b)	—	—	—	—
Custard Apples	bushel	99.66	—	120.40	—	—	—	—
Figs	"	38.98	69.99	121.69	72.96	109.59	—	9.00
Mangoes	"	116.33	—	160.56	—	—	—	—
Nectarines	"	60.88	107.76	75.00	126.16	96.76	—	30.00
Nuts	lb.	720.93	584.32	264.85	805.96	210.51	—	50.00
Olives	cwt.	22.67	46.50	—	19.38	—	—	—
Pineapples	dozen	183.54	—	314.83	—	14.75	—	—
Papaws	"	99.43	—	401.75	—	—	—	—
Peaches	bushel	107.61	170.43	82.82	130.56	95.64	95.01	48.00
Pears	"	136.49	155.76	112.84	171.20	109.98	102.34	38.25
Persimmons	"	69.89	61.60	126.00	63.00	—	—	—
Plums	"	60.80	68.91	80.44	71.39	84.78	133.41	23.67
Prunes	"	114.23	112.75	—	(d)	—	—	8.00
Quinces	"	96.42	90.76	78.42	111.46	93.43	142.85	63.33
Raspberries	cwt.	(b)	19.54	—	26.11	—	39.71	—
Strawberries	"	17.00	24.04	22.38	14.71	24.03	31.49	—

(a) Yield per acre of trees or plants in bearing. (b) Not available. (c) Included with Other Oranges.
 (d) Included with Plums. (e) New South Wales and Victoria only. (f) Victoria, South Australia and Tasmania only. (g) Exclusive of Tasmania. (h) Includes bounty paid to fruitgrowers. (i) Including fruit grown for private use.

FRUIT TREES ... AND ... FRUIT TREE STOCKS

SPLENDID STOCK OF ALL LEADING VARIETIES AVAILABLE.

Apples worked on Northern Spy, also leading varieties on Seedling Stock, and whole root worked; these are giving splendid results.

Apricots worked on Apricot Seedlings, Plum and Peach stocks.

Cherries worked on Mazzard Seedling or Kentish stock, limited number on Mahaleb.

Peaches, Nectarines, Pears, Plums, Quinces, Berry Bushes, Nuts, etc.

Carefully packed and despatched to all parts of the world.

ALSO LARGE STOCKS OF ORNAMENTAL TREES AND SHRUBS.

— WRITE FOR CATALOGUE —

C. A. NOBELIUS & SONS
Pty. Ltd.

GEMBROOK NURSERIES,

Emerald .. Victoria

Phone: Ringwood 171. Code: A.B.C. 5th Ed.

FRUIT TREES

GOODMAN'S
Lead for
Quality, Reliability, and Value

Orchardists and fruit growers in all parts of Australia buy their trees with the utmost confidence from Goodman's. Repeat orders follow season after season.

Backed by 51 years' experience and expert knowledge, Goodman's Trees guarantee the grower bumper crops of choicest fruit, that brings highest prices in home and overseas markets.

For 1940 delivery, an excellent range of varieties worked on wonderful stocks. Expert packing and prompt despatch to any part of the world.

Write for Goodman's Fruit Tree Catalogue — Post Free on Request.

C. J. Goodman
Picnic Point Nurseries, Bairnsdale, Victoria

Notes.—Gross value is the value placed on recorded production at the price realised in the principal markets of each State. For the conversion of bushels in the above table to lb. avoirdupois the following factors should give reasonable approximations:—Apples, 42 lb.; Apricots, 45 lb.; Bananas, 56 lb.; Cherries, 38 lb.; Oranges and Lemons, 42 lb.; Custard Apples, 35 lb.; Figs, 32 lb.; Mangoes, 40 lb.; Nectarines, 50 lb.; Passion Fruit, 25 lb.; Peaches, 45 lb.; Pears, 45 lb.; Persimmons, 44 lb.; Plums, 45 lb.; Quinces, 42 lb.

TABLE 4.—FRUIT PRODUCTION, GROSS VALUE, SEASON 1937-38.

Fruit.	N.S.W.	Vic (h)	Q'land.	S. Aust. (h)	W.A.	Tas. (h)	Australian Capital Territory.	Total.
	£	£	£	£	£	£	£	£
Apples	371,830	552,256	80,966	239,325	383,465	1,198,000	609	.. 2,826,451
Apricots	92,570	92,119	7,867	129,518	28,136	28,100	150	.. 378,460
Bananas	1,052,450	—	383,764	—	19,141	—	—	.. 1,455,355
Cherries	115,320	31,490	280	32,821	1,315	1,500	30	.. 182,756
Citrus—								
Oranges—Washington								
Navels	290,350	127,384	116,031	175,779	127,187	—	—	.. 1,501,433
Other	400,190	105,837		44,811				
Mandarins	101,160	6,301	—	—	6,403	—	—	..
Lemons	78,280	65,387	12,529	13,647	19,286	—	—	.. 189,129
Other	23,910	352	114	1,490	842	—	—	.. 26,708
Coconuts	—	—	60	—	—	—	—	.. 60
Custard Apples	140	—	11,996	—	—	—	—	.. 12,136
Figs	7,360	6,591	1,318	13,014	7,876	—	7	.. 36,166
Mangoes	380	—	22,170	—	—	—	—	.. 22,550
Nectarines	17,690	5,569	1,440	9,068	6,744	—	18	.. 40,529
Nuts	10,065	9,972	290	34,724	2,875	—	1	.. 57,927
Olives	120	667	—	3,792	—	—	—	.. 4,579
Passionfruit	32,710	20,806	11,034	115	11,896	—	—	.. 76,561
Pineapples	7,130	—	268,681	—	91	—	—	.. 275,902
Papaws	70	—	18,598	—	—	—	—	.. 18,668
Peaches	243,070	402,585	27,785	49,720	30,482	1,230	57	.. 754,929
Pears	159,810	343,582	6,545	66,798	47,398	51,700	54	.. 675,887
Persimmons	2,630	110	38	22	—	—	1	.. 2,801
Plums	57,490	35,685	26,664	36,418	30,289	10,120	84	.. 333,041
Prunes	128,180	8,108	—	—	—	—	3	
Quinces	13,840	10,547	235	2,912	2,214	900	60	.. 30,708
Raspberries	10	6,648	—	4,352	—	75,200	—	.. 86,210
Strawberries	1,200	18,120	10,361	7,414	3,062	19,200	—	.. 59,357
Other Small, N.E.I.	252	10,637	112	2,505	111	53,940	—	.. 67,557
All Other, N.E.I. (i)	1,593	77,614	5,472	1,069	2,555	110	—	.. 88,413
Total	3,209,800	1,938,367	1,014,350	869,314	731,368	1,440,000	1,074	.. 9,204,273

See Notes on Table 3.

**South Australia's Premier Fruit Tree Nurseries Offer
ALL LEADING COMMERCIAL VARIETIES OF**

FRUIT TREES

Hardy, Healthy and Well Grown Under Ideal Conditions.

Send for Illustrated Catalogue

H. N. WICKS, Balhannah, South Australia

BUSINESS ESTABLISHED OVER HALF A CENTURY.

**Protect
your profits
with the New
SUNSHINE
Two-Wheel
SPRAYER**

The Sunshine Two-wheel Power Spraying Outfit provides the greatest possible help in combating orchard and vineyard diseases and parasites.

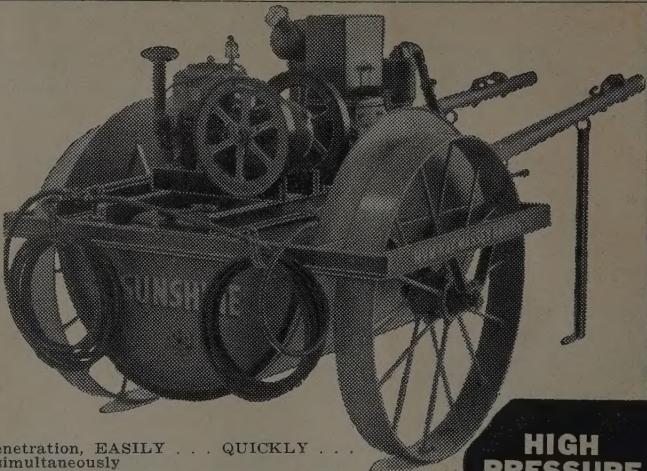
It gives thorough coverage and powerful penetration, EASILY . . . QUICKLY . . . SURELY. Will serve 4 nozzles or 2 guns simultaneously.

It delivers 4 gallons per minute at 350 lbs. pressure with engine running at 600 r.p.m. Increased delivery obtainable by raising engine speed. Pressure readily adjustable. It is economical to buy and to run, easy to operate, light in draught and absolutely dependable for long, trouble-free service.

The engine (Sundial 2 H.P.) can be removed quickly to drive other machinery, and just as easily replaced in its correct adjustment to the spray pump.

THE SUNSHINE SPRAYING
OUTFIT FOR USE ON DRAY
— OR TRUCK —
IS EQUALLY OUTSTANDING

Ask your local agent for free leaflet, or write to
H. V. MCKAY MASSEY HARRIS Pty. Ltd.
Sunshine Harvester Works, Sunshine.
Also at Melbourne, Sydney, Adelaide, Perth.
Queensland Distributors: **H. V. McKay Massey
Harris (Qld.) Pty. Ltd.**, South Brisbane.



**HIGH
PRESSURE**
**GENEROUS
CAPACITY**
**LOWEST
RUNNING
COST**

**Fruit Trees
Fruit Trees**

**Fruit Trees
Fruit Trees**

**Fruit Trees
Fruit Trees**

BEST QUALITY AT MOST REASONABLE PRICES

BOOK NOW FOR 1940 PLANTING

WRITE FOR

New Catalogs and Price Lists NOW READY with Many New Varieties in Cherries, Peaches, Apricots, Apples, Nectarines, Plums of outstanding merit, and others

JOHN BRUNNING & SONS
Somerville Nurseries - Somerville, Victoria, Australia

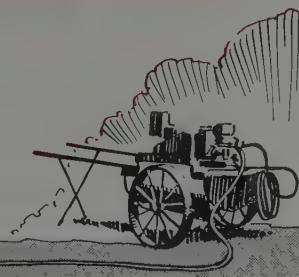
Orchards and Nurseries, 250 Acres.
Private Cool Store, 17,500 Case Capacity.

ESTABLISHED 1866.

PHONES: Somerville 221, 252.
Overseas Code: Bentley's Phrase Code and Private.

CONTROL OF INSECT PESTS AND FUNGOID DISEASES

**Spraying in the Orchard,
Vineyard & Citrus Grove
Latest Methods
Described and Illustrated**



IN THE CULTIVATION OF FRUIT, spraying plays such an important part that this subject is specialised in the following pages.

It should here be stated, however, that important though spraying undoubtedly is, there are many other aspects of orchard work, all of which are essential for the production of good fruit. These include aspect, soil, stocks, varieties, drainage, cultivation, pruning, irrigation, orchard sanitation, cover crops, manuring, etc.

With regard to spraying, emphasis should be laid on the **thoroughness** with which the work is performed. Furthermore, it is of vital importance that spraying should be **correctly timed**. The Departments of Agriculture are now performing good service by broadcasting the best time to spray in specific areas to deal with Black Spot, Codling Moth, etc.

Every year sees some advance in the art of spraying. The use of lure pots is now fairly general for calculating the peak flight of moths so that spraying with arsenate of lead can be given to destroy the young larvae, or with oil to act as an ovicide.

The seasons are divided thus:—

Spring.—September, October, November.

Summer.—December, January, February.

Autumn.—March, April, May.

Winter.—June, July, August.

In Winter.—Spray deciduous trees with red oil, or lime-sulphur, to check San Jose, mussel and olive scale, red spider, bryobia mite, Pear phytophthora.

For several fruit rots, spray in mid-Winter, after pruning, with Bordeaux, 6-3-40. Spray vines with red oil, 1-20, to kill vine scale.

Late Winter (and before buds open in the Spring).—Spray with red oil for scales and mites, and with Bordeaux or lime-sulphur for fungi. Lime-sulphur also destroys red spider and woolly aphids.

In Spring.—Spray deciduous trees and vines with Bordeaux or Burgundy mixture against black spot, leaf curl and other fungi. Spray with arsenate of lead for codling moth and leaf-eating insects. Many growers use for the "calyx" spray on Apples and Pears, a combination of arsenate of lead with a fungicide. As a fungicide some growers use lime-sulphur, others Bordeaux or Burgundy. In Spring, spray Peach, Nectarine, Plum trees, Roses, shrubs and garden plants with nicotine preparations to kill aphides, scales and plant bugs. Spray Apricot trees with Bordeaux 6-4-40 plus 1 lb. lime casein spreader during pink bud stage.

In Summer.—Spray citrus trees with white oils or fumigate with hydrocyanic acid gas to kill scales. Continue with arsenate of lead on deciduous trees; white Summer spraying oils will kill the codling eggs, and generally control aphis, red spider and other orchard pests. Continue with nicotine for aphides and scales. Dust with nicotine or pyrethrum insecticides.

In Autumn.—Spray deciduous trees with arsenate of lead for leaf and fruit-eating pests. Spray Apricot trees with Bordeaux 6-4-40 plus 1 lb. lime casein spreader to 100 gallons of spray, this being one of the necessary sprays to control scab or shot hole.

The use of spreaders to obtain more even distribution and better adhesion is recommended.

Always cleanse the vats and hoses immediately after using, otherwise copper sprays will injure the equipment, whilst oil emulsions may be spoilt by traces of lime, tobacco, etc.

VEGETABLE CULTURE.

Spraying and Dusting.

The foregoing information is generally applicable for controlling vegetable pests.

The dusting of the plants with insecticides and fungicides has proved successful. There are several valuable proprietary dusts on the market.

COOPER SPRAYS

Are Definitely Superior

COOPER'S

ARSINETTE Specially prepared Arsenate of Lead Powder, unsurpassed for fineness of particles. Used for the control of all chewing grubs and insects. Packed in 1½ cwt., 1 cwt., 28 lb. and 4 lb. and 1 lb. units.

COOPER'S

ALBOLEUM Emulsified White Oil. Safe to use on all classes of fruit trees and shrubs at any season of the year. Used for the control of scale pests and as a general tonic. Controls Red Spider and Aphis.

Packed in 45 gall., 5 gall., 2 gall., and 1 gall. containers.

COOPER'S

BORDINETTE Ready prepared Copper Fungicide. Mixes immediately with cold water and is then ready for use. For the control of all Fungous Diseases of plants for which a Copper spray is advocated. Dilution 1 lb. to 10 gallons.

Packed in 56 lb., 28 lb., 4 lb., and 8 oz. containers.

COOPER'S

COLLOIDAL SULPHUR Pure sulphur in semi-paste form. The finest form of sulphur ever produced, the particle size being less than one 25,000th part of an inch. Safe to use at all times. Controls Mildews, Spots, Brown Rot of Stone Fruit and other diseases for which sulphur in any form is used.

Packed in 7 lb. and 3 lb. glass jars. Dilution 2 lb.-100 gallons.

COOPER'S

DRYMAC Derris Dust A standardised non-poisonous dusting powder of proved efficiency for the destruction of insect pests attacking vines, vegetables and flowers, particularly cabbage moth caterpillars, aphis, thrips, beetles, etc.

Sold in 112 lb. bags, 56 lb. cases, 7 lb. and 2 lb. and 1 lb. cartons.

COOPER'S

OVICIDE The original Tar Distillate Wash. Used all over Australia for the control of aphis and other overwintering pests. For dormant spraying only.

Packed in 45 gall., 5 gall., 2 gall., and 1 gall. containers. Dilution 1 gall. to 40 gall. water.

Also KATAKILLA: non-poisonous derris spray; NICOTINE: 40 per cent.; WEEDICIDE: weed and scrub killer; APTERITE: soil fumigant; WORMKILLER: for lawns, etc.; PRICES AND PAMPHLETS ON APPLICATION.

William Cooper & Nephews (Australia) Pty. Limited, Sydney

(Manufacturers of Standardised Horticultural Remedies)

Victorian Distributor: Ramsay & Treganowan Ltd., 469-477 Latrobe St., Melbourne, C.1.

CLASSIFIED INDEX OF ORCHARD PESTS AND DISEASES.

Description of Pests as Illustrated.

Woolly Aphis.—This aphid lives in hollows and crevices, on the roots, trunks, and limbs of the Apple tree, causing very unsightly swellings, made by the pricking of their beak-like rostrums (or sucking tubes), thus absorbing the juices of the tree. They are manifested mainly by a white, downy appearance on the twigs, limbs and branches.

Aphis of Peach (Black and Green).—Black and Green Aphids infest branches and leaves, causing the latter to curl and dry up. They are very troublesome when the young shoots are beginning to grow in spring.

Black aphid infest roots.

Various Aphis also attack Roses, Carnations, Pansies, and garden plants.

Apple Mussel Scale.—Attacks the fruit and branches of Apples, Pears, Plums, etc., disfigures the fruit; absorbs sap. If unchecked, will encrust the trunk and main arms.

Apricot Beetles.—Small Weevils with a tapering body, most destructive; they do great damage by boring and tunnelling into Apricot trees.

Black Spot of Apple and Pears.—These fungi attack both fruit and leaves. On the fruit they form dark green, often circular, velvety patches, and generally cause the fruit to crack. On the leaves they appear as round or oval spots.

Black Spot of Orange and Lemon.—The round sunken spots are of a dark brown color, and nestling in the centre are the minute, black, punctiform pustules, visible to the naked eye.

Methods of Control of Insect Pests

(1) **APHIS, WOOLLY** (*Eriosoma lanigera*).—Attacks Apple and Pear trees. Introduce *Aphelinus* parasite into orchards. Spray forcibly with nicotine solutions, white oils in summer, and Red Oil in winter. A combination winter spray, Nicotine Sulphate, Red Oil and soap has been found effective. Use pyrethrum dusts. Grow trees having blight-proof stocks.

(2) **APHIS OF PEACH.**—There are two aphids commonly attacking the Peach:—

Green Peach Aphis—*Myzus persicae*.

Black Peach Aphis—*Anuraphis persicae-niger*.

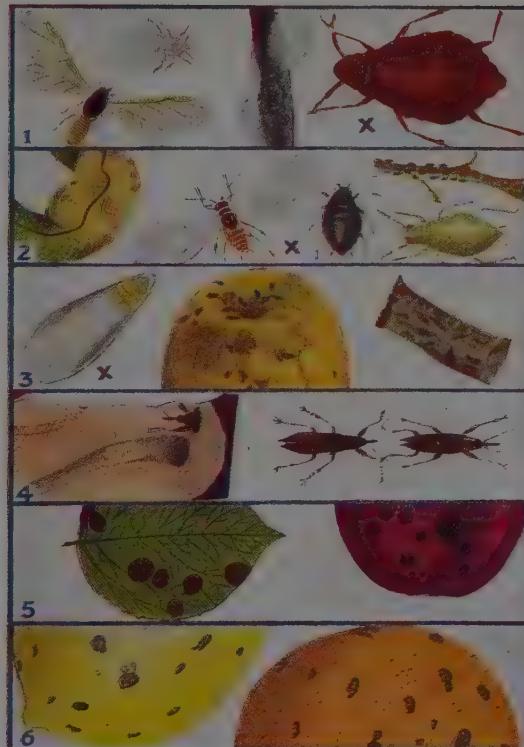
For Green Peach Aphis, use tar distillate 1 in 35 before mid-July; lime sulphur during winter; and white oil and nicotine sprays in the summer. It may be necessary to spray the trees several times in the summer. Keep ground near trees free from weeds.

For Black Peach Aphis, use nicotine sulphate or tobacco sprays in the summer. It may be necessary to spray the trees several times in the summer. Keep ground near trees free from weeds.

For the various aphids attacking Roses, Carnations, garden plants and vegetables, use tobacco sprays or dusts.

(3) **APPLE MUSSEL SCALE** (*Lepidosaphes ulmi*).—Spray in winter with Miscible Red Oils, 1

Pest or Disease. (X magnified.)



and Plant Diseases (illustrated above).

in 25, or Lime Sulphur, 1 in 15. Spray in summer with White Oils or nicotine solutions.

(4) **APRICOT BEETLES** (*Belus sp.*).—Spray with Arsenate of Lead. Inject Bisulphide of Carbon into tunnels made by beetles.

(5) **BLACK SPOT OF APPLE** (*Venturia inaequalis*).—Spray with Bordeaux Mixture 6-4-40 at the green tip stage, followed by Lime Sulphur 2-80 at petal fall stage, followed by Lime Sulphur 1 in 80 two weeks later.

For Pear Spot (*Venturia pirina*), spray with Bordeaux Mixture, 6-4-40, when the young folded leaves are just protruding from the bud, and again at a slightly later stage, when the young folded leaves and the blossom bud have separated. The blossom buds would still be green.

Some growers follow up with 4-5 ozs. of blue-stone with every 80 gallon vat of lead spray, using also 1 lb. lime casein spreader, or Bordeaux mixture 3-3-50 three weeks after the fruit has formed. The above schedule should not be used for Josephine Pears.

(6) **BLACK SPOT OF ORANGE and LEMON** (*Phoma citricarpa*).—Spray with neutral Bordeaux, 3-3-50, at the first appearance of blossom. If this stage is missed, spray 6-4-100 when fruit is well set. Citrus trees, where the drainage is not efficient, are more prone to this disease than trees on well-drained plantations. Use Sulphate of Iron, $\frac{1}{2}$ lb. to each tree.

Bordeaux Sprays

Prepared from

ESA BLUESTONE

PREVENT AND CONTROL FRUIT DISEASE.

ORCHARDISTS! Is Your Fruit Clean and of First Grade Quality?



Spraying to Prevent Disease is Your Only Insurance

Bordeaux when prepared from high grade Bluestone and Lime
— is the principal fungicide for fruit disease control. —

ESA BLUESTONE WHICH IS GUARANTEED TO BE NOT LESS THAN 99 PER CENT. PURE IS THE IDEAL BLUESTONE FOR THE JOB.

GRADES SUPPLIED:

Mixed Crystals in 1 cwt. cases and 5 cwt. casks
Fine Crystals in 1 cwt. cases and 5 cwt. casks
Granulated (Snow) in 56 lb. cartons

It is entirely of AUSTRALIAN Manufacture, produced by—

The Electrolytic Refining and Smelting Company of Australia Ltd.
Incorporated in New South Wales.

At its Works, PORT KEMBLA, N.S.W.

MELBOURNE OFFICE:
360 Collins Street, Melbourne.

SYDNEY OFFICE:
25 O'Connell Street, Sydney.

Agents for all States:—Messrs Elder, Smith & Co. Ltd.
Obtain our Booklet:—"Better Yields by Spraying with ESA BLUESTONE."
ORCHARDISTS! LOOK FOR THE BRAND! "ESA."

CLASSIFIED INDEX OF ORCHARD PESTS AND DISEASES (Continued).

Description of Pests as Illustrated.

Black Spot of Vine.—The spores are ever-present. Under genial conditions for incubation and growth, the disease spreads rapidly, causing much loss. The disease seldom appears in dry seasons.

Brown Rot.—One of the most serious fungus diseases, the twigs, blossoms and fruit are attacked. (1) Blossom attack looks like frost injury. (2) The infected area on fruit spreads in concentric rings, which consist of millions of summer spores.

Cherry Borer.—The grub of the moth destroys Cherry, Apricot, Peach, Pear and Plum trees by boring into the branches, leaving a sawdust-like appearance on the outside of the hole.

Cherry Green Beetle.—Attacks the leaves of Cherry, Peach, Plum and Apple trees, Roses, and garden plants, etc., and, being in large swarms, will strip a tree in a very short time.

Codling Moth.—The grubs, which hatch in eight or nine days from eggs laid at calyx of young fruit and on leaves, eat into the core; then they eat a tunnel to the outside of the fruit and lower themselves to the ground, and commence the life-cycle. Several broods appear each season.

Cottony Cushion Scale.—A cushion-shaped scale insect, with a whitish-yellow, cottony down; attacks the leaves and stems.

Curculio of Vine.—A small boring weevil, reddish-brown, with light markings; very destructive. Will remain for twelve months or more in the wood.

Methods of Control of Insect Pests

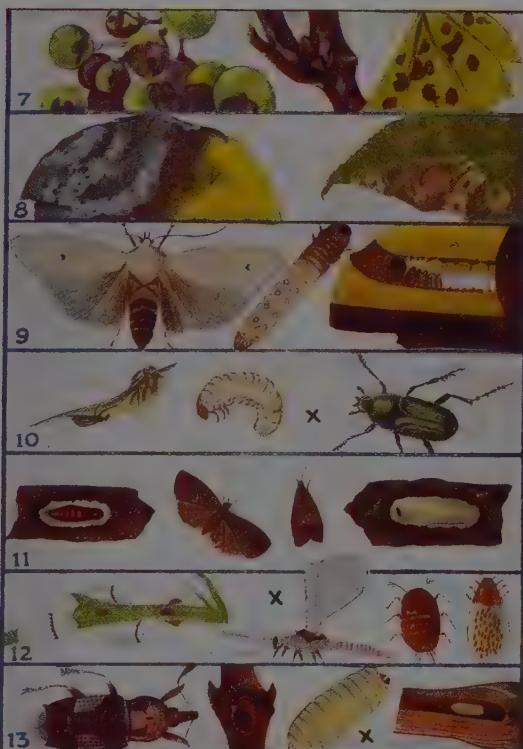
(7) **BLACK SPOT OF THE VINE** [*Anthracnose*] (*Manginia ampelina*).—Swab with Acid Iron Solution in early spring before vines show movement. Spray with Bordeaux or Burgundy Mixture (alkaline) when buds are bursting. Follow with Bordeaux or Burgundy neutral, giving applications according to weather conditions.

(8) **BROWN ROT** (*Sclerotinia fructicola*).—Attacks Peach, Plum, and other stone fruit. Destroy mummified fruit. Spray Peaches, Plums, with Bordeaux 6-4-40 at bud movement; follow with Dry Mix Lime Sulphur, 25 lbs. to 100 gallons, at petal fall, when the fruit is half grown and five weeks before picking; Apricots, Bordeaux, 6-4-40 early pink bud and late pink bud.

(9) **CHERRY BORER** (*Maroga unipunctata*).—Clear away the sawdust-like matter, inject Bisulphide of Carbon into tunnel; when using carbon, close mouth of tunnel immediately to keep fumes from escaping. Caterpillars can be destroyed by probing the tunnel.

(10) **CHERRY GREEN BEETLE** (*Diphucephala colaspoides*).—If no fruit on the tree, spray well with Arsenate of Lead when beetle appears. When fruit is ripening, spray with Hellebore powder, 1 oz. in 2 gallons of warm

Pest or Disease. (X magnified.)



and Plant Diseases (illustrated above).

water. This should be used perfectly fresh, as it is liable to deteriorate with age or exposure.

(11) **CODLING MOTH** (*Cydia pomonella*).—Attacks Apple, Pear, Apricot, Quince, Loquat, Walnut, etc. Spray with Arsenate of Lead, first after petals fall and before calyx cup closes, and at intervals of 21-30 days until within three weeks of gathering fruit. Fungicides may be used with calyx spray. Excellent results have been secured by spraying with White Oils after first Arsenate of Lead spray. Destroy fallen infected fruit. If bandaging trees, examine and destroy larvae, at least every 10 days. Use chemical bandages.

(12) **COTTONY-CUSHION SCALE** (*Icerya purchasi*).—Attacks Orange, Lemon and other citrus trees, shrubs, hedge plants, etc., very severe on Pittosporum hedges. Spray with White Oil when the trees are making a decided growth about November. This is the time of the release of the young scale in most districts.

(13) **CURCULIO OF VINE** (*Orthorrhynchus Klugii*).—Inject Bisulphide of Carbon into tunnel and close mouth. Probe with wire. Deterrent.—Spray with Lime-Sulphur in winter.



DEFENCELESSNESS

The utter defencelessness of fruit trees against insect and fungus pests necessitates a continual fight to save them from their natural enemies. Most successful growers declare that in any comprehensive defence spray program, Gargoyle RED, PALE, and WHITE Spraying Oils play a vitally important part. Not only are they, themselves, highly efficient insecticides, but when mixed with other insecticides and fungicides they greatly increase THEIR efficiency. Always ask for "Gargoyle"—the brand that is famous throughout Australia as the pioneer brand of the finest Spray Oils in the world.

VACUUM OIL COMPANY PTY. LTD.
(Incorporated in Australia)

Gargoyle Spraying Oils

RED • PALE • WHITE

SP 95

CLASSIFIED INDEX OF ORCHARD PESTS AND DISEASES (Continued).

Description of Pests as Illustrated.

Downy Mildew of Vine.—This serious disease over-winters in the dead leaves infected during the preceding summer. Infection in the spring takes place through spores being splashed up by falling rain. These over-wintering spores (or oospores) retain vitality for over 12 months.

Elephant Beetle of Orange and Lemon.—A large brownish weevil with a long snout. This has become a serious pest to citrus trees. It bores into the trunks of the trees, causing them to die. It is also a pest of Elm and other street trees.

Emperor Gum Moth.—One of the largest Victorian moths. Grey in color with an eye-like spot on each wing, the larvae feed on Apple and Pear trees, also Eucalyptus and Pepper trees. Very destructive to Roses.

Fruit Fly.—The female punctures the fruit with its ovipositor, and deposits the eggs. Fruit is punctured in all stages, from green to ripe. The eggs hatch in two to five days in summer, and 10 to 15 in winter. In walking the wings are drooped. In summer the fly may complete its cycle from eggs to fly in 20 days.

Harlequin Fruit Bug.—These bugs, by making holes in the rind of the Apple with their rostrums (or sucking tubes), draw out the juice, causing the fruit to spot. They are also very destructive to garden plants, especially Dahlias, Tomatoes, etc.

Holy or Cross Bug.—This plant bug is a native insect and is very destructive to all kinds of Wattles (Acacias) and citrus trees. Like all plant bugs, this species sucks the sap with its rostrum or beak, causing the trees (twigs) to turn black and die down.

Methods of Control of Insect Pests and Plant Diseases (illustrated above).

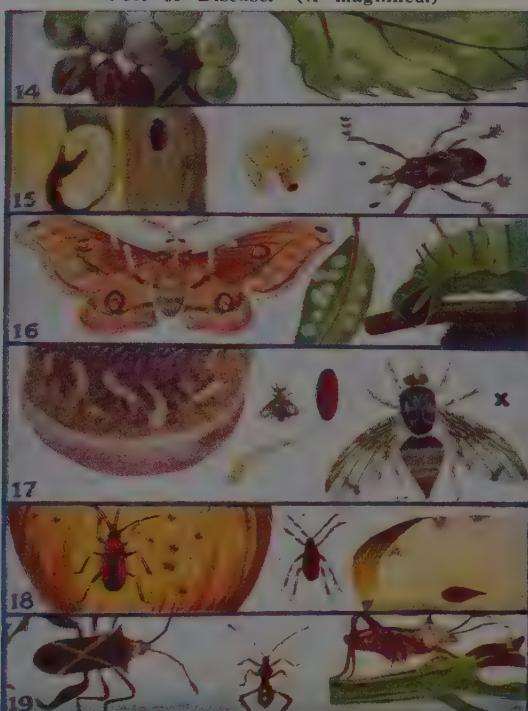
(14) **DOWNTY MILDEW OF THE VINE** (*Plasmopara viticola*).—Spray with alkaline Copper Soda when vine shoots have grown 8 to 10 leaves. Subsequent sprayings about every seven days if weather conducive to fungus development. The summer treatment for Black Spot and Downy Mildew is identical.

(15) **ELEPHANT BEETLE OF THE ORANGE AND LEMON** (*Orthorrhinus cylindrostis*).—No satisfactory method is known for the control of this pest.

(16) **EMPEROR GUM MOTH** (*Antherea eucaalypti*).—Spray when observed with Arsenate of Lead.

(17) **FRUIT FLY [Mediterranean]** (*Ceratitis capitata*).—Attacks Peach, Orange, Banana, Quince, Apple, Tomato, Grape, etc. Kerosene in shallow vessels attracts the fly.

Pest or Disease. (X magnified.)



Destroy all infected fruit. Destroy weeds, work ground well under trees; poultry and insectivorous birds destroy chrysalids. Use a spraying solution—1 gallon of fruit juice (boil refuse fruit for about one hour), 1 lb. Arsenate of Lead, 25 gallons of water. Spray on windward side of tree.

A Good Lure.—One tablespoonful Scrubbs' ammonia, one teaspoonful essence of vanilla, 1½ pints water. A dessertspoonful of black treacle may be added, but is not essential. "Clensel" and other lures have been used with good results.

(18) **HARLEQUIN FRUIT BUG** (*Dindymus versicolor*).—Spray with Nicotine Solutions, Benzole Emulsion, White Oil or Clensel (1 in 25), whenever observed. Keep orchards free of marshmallows.

(19) **HOLY OR CROSS BUG** (*Mictis profana*).—When observed, spray with Benzole Emulsion, Nicotine Extracts, or Pine Spray. Shake trees over piece of blanket, and destroy all bugs that fall. Spray with Benzol Emulsion.



SPRAYS that PAY

Comply with Standards of Quality Specified by all the various State Departments of Agriculture.

We have a Spray for Every Purpose

ARSENATE OF LEAD PASTE
ARSENATE OF LEAD POWDER
LIME SULPHUR (20% Polysulphide Sulphur)
COLLOIDAL SULPHUR
NICOTINE SULPHATE 40%
IMPROVED SPRAY SPREADER
CODLIN MOTH TREE BAND
PREPARED WHITE OIL
PALE OIL
WHITE OIL EMULSION
OVICIDAL WASH (Tar Distillate)
RED SPRAYING OIL
COPPER SULPHATE; LUMP AND NEIGE
SELECTED SPRAYING LIME
PREPARED SPRAYING LIME
"HOME-MADE" BORDEAUX 6-4-40
"HOME-MADE" BORDEAUX 4-4-40
BURGUNDY MIXTURE
DRY BORDEAUX
CALCIUM ARSENATE
BENZOLE EMULSION
MANURIAL INSECTICIDE
ARZEEN POWDER (80% As₂O₃)
ARZEEN LIQUID (48% As₂O₃)
ARSENIC PENTOXIDE (83/85% As₂O₅)
LIQ. PENTOXIDE WEED-KILLER (36% As₂O₅)
WEED, SCRUB AND TREE KILLER
WOOD PRESERVATIVE
SULPHUR-POWDER AND DUSTING
COPPER CARBONATE

Manufacturers:

VICTOR LEGGO & FARMERS LIMITED

222 Queen Street, Melbourne
Phone: C 1243. Box 508 H.

Distributors all States:

N.S.W.: A. Victor Leggo & Co. Pty. Ltd., 52 Bridge St., Sydney.
Queensland: A. Victor Leggo & Co. Pty. Ltd., 20 Albert St., Brisbane.
South Australia: Percy J. A. Lawrence, Panmure Chambers, Gresham St., Adelaide.
Western Australia: A. Hicks, 18 William St., Perth; and all Wholesale Distributing Houses.
Tasmania: Agents and Distributors in all leading districts

Methods of Control of Insect Pests, as illustrated on opposite page.

(20) LEAF CURL AND DIEBACK OF PEACH.

—By spraying in the late dormant period, or when the earliest buds are showing the slightest trace of pink, Leaf Curl can be prevented. Use Bordeaux Mixture (6-4-40). Finish spraying by the "early pink" stage.

(21) LEMON LEAF AND PEEL SCALE (Mytilapsis citricola).—Thin out all dead or diseased wood. Spray with White Oil, 1-40, when trees are making decided growth. Make solution soapy by adding 4 ozs. of a good hard soap to each 40 gallons. Fumigate with Hydrocyanic Acid Gas.

(22) LIGHT BROWN APPLE MOTH (Tortrix postvittana).—This pest is very common in home gardens, attacking Roses, Dahlias, Tomatoes, etc. The caterpillar is very lively, and quickly escapes if disturbed. Spray with Arsenate of Lead, same as for Codling Moth, No. 11.

(23) "LOOPERS" OR LOOPER CATERPILLARS (Phrissogonus sp.).—These attack fruit trees, particularly Apples, Pears and Cherries; and garden plants in the spring. Spray with Arsenate of Lead.

(24) OIDIUM [Powdery Mildew of the Vine] (Oidium Tuckerii).—Dust the vines with Flowers of Sulphur; first application when new shoots are six inches long; also dust with Sulphur just before blooming and after the fruit has formed. Keep vineyard clear of weeds.

(25) OLEANDER OR ROUND WHITE SCALE (Aspidiotus hederae).—Attack Orange and Lemon trees, also Oleanders and garden shrubs, palms, ferns, etc. Spray well with White Oil or Nicotine solution when young are hatching (in summer). Starch spray is also recommended. On Palms, Dracaenas, Ferns, etc., use the Starch spray.

(26) OLIVE OR BLACK SCALE (Saissetia oleae).—Attacks citrus, Apple, Apricot, vine, Olive, Pear, and Plum trees, also garden shrubs. Spray between November and March with White Oils. When young scale are moving is the favored time for their destruction.

(27) ORANGE BUTTERFLY (Papilio anactus).—Spray with Arsenate of Lead.

CLASSIFIED INDEX OF ORCHARD PESTS AND DISEASES (Continued).

Description of Pests as Illustrated.

Leaf Curl and Dieback of Peach.—When affected with Leaf Curl (*Exoascus deformans*), the first-formed leaves become thickened, puckered and discolored, and soon fall away. The fungus seems to winter in the buds.

Lemon Leaf and Peel Scale.—A small, dark-colored, mussel-shaped scale; the insect attacks leaves, bark and fruit of Lemon, Orange, Citron, Grapefruit, etc.

Light Brown Apple Moth.—These insects often attack late Apples, such as Yates, as late as March. Very destructive to Roses and garden plants.

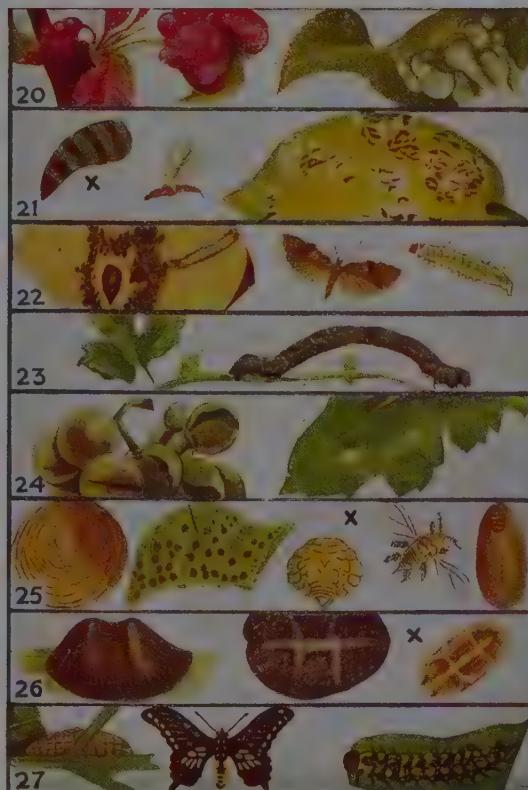
Looper Caterpillar.—The caterpillar loops its body up when walking. Some caterpillars resemble dead twigs. They are native insects and are becoming a serious pest in many parts of Victoria.

Oidium (Powdery Mildew of Vine).—This fungus appears during the growing season under sultry conditions, such as during a damp spring or after thunderstorms in summer. Dense undergrowth of weeds also tends to create conditions favorable for Oidium development.

Oleander or Round White Scale.—A small, light, greyish-brown, sometimes whitish scale, which attacks the leaves and stem, and is a most difficult insect to destroy when trees are badly infested with it.

Olive or Black Scale.—These destructive scales cause sooty fungus to develop on the leaves, making trees sickly. The scales are light brown when young with an H-like marking on back of scale.

Orange Butterfly.—In the warmer parts of Victoria these insects usually appear early in November. The yellow and black spiny caterpillars will attack Grapefruit if Orange or Lemon trees are not available; they attack the leaves, flowers and fruits of citrus.



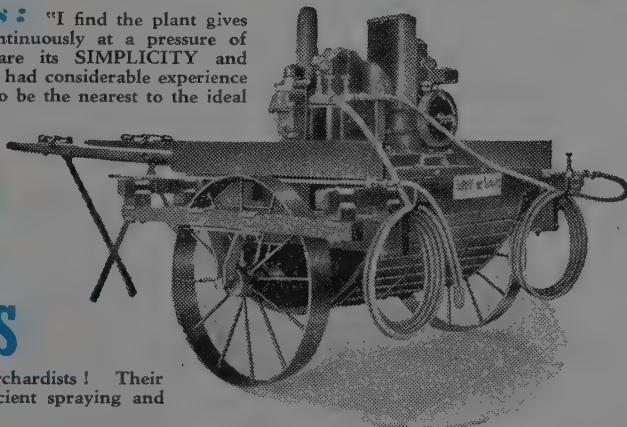
A GRIFFITH USER says: "I find the plant gives me sufficient power to operate six nozzles continuously at a pressure of 300 lbs. . . . the outstanding features . . . are its SIMPLICITY and ACCESSIBILITY of all working parts. I have had considerable experience with spraying outfits and I find the new M.V. to be the nearest to the ideal spray."—Sgd. G.H.W.

 **ORCHARD
POWER
SPRAY OUTFITS**

Designed with the assistance of practical orchardists! Their BIG MARGIN OF POWER ensures fast, efficient spraying and absolute reliability.

The SPECIALLY DESIGNED M.V. PUMP has an outstanding performance—less power is needed to drive it—making the M.V. one of the most economical sprayers on the market! See the M.V. first before you buy.

FREE Literature gladly sent — NO OBLIGATION.



IMPORTANT M.V. FEATURES
include Pressure Unloader, Totally Enclosed Working Parts, Oil Bath Lubrication, Detachable Porcelain Lined Cylinders, quickly adjustable Plungers, &c.

Moffat-Virtue Ltd.

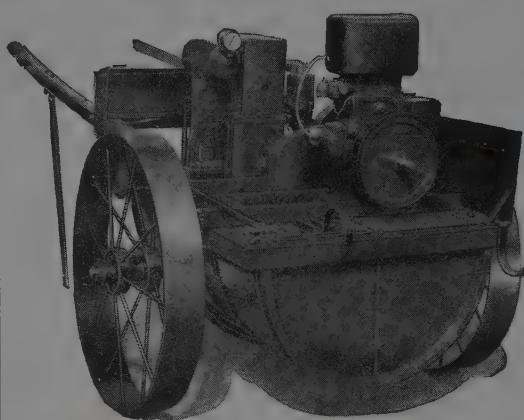
11-25 PALMER STREET, SYDNEY, N.S.W.

PHONE: FL 5214 (6 lines).

ENGINEERS, MANUFACTURERS
AND MACHINERY MERCHANTS

AND AT BRISBANE AND LONGREACH, Qld.

TELEGRAMS: "Virtue," Sydney.



Buzacott

Spray Materials & Dusts

The name of "Buzacott" on your spray materials or dust is a guarantee of highest quality.

SPRAY MATERIALS.

White Oil (Emulsion)	for Citrus
Red Oil	for Dormant Spraying
Tar Distillate	for Apis
Copper Fungicide	for Fungus Diseases
Lime Sulphur Solution	for General Spraying
Colloidal Sulphur	for Summer Spraying
40% Nicotine Sulphate	Contact Insecticide
Sulphur Smoke	Insecticide & Fungicide
Arsenate of Lead	for Codlin & Chewers

DRY DUSTS.

- No. 4—Nicotine Dust for Sucking Insects.
- No. 9—Combined Insect Dust for Chewing and Sucking Insects.
- No. 14—Copper Fungus Dust for Fungus Diseases.
- No. 17—Chewing Insect Dust.
- No. 18—Chewing Insect Dust (double strength).
- No. 21—Blight, Fungus and Insect Dust.
- No. 45—Quick acting Combined Sulphur and Nicotine Dust for Sucking Insects.
- No. 50—All-in-One Dust, a general purpose Insecticide and Fungicide.
- No. 51—"Supaderris" (Derris Dust), non-poisonous, for Sucking and Chewing Insects.

Buzacott - Wolseley

LIMITED

7-11 Market St., Sydney

Stainless Steel Pump Cylinders
and other

Important Features

make the
"Buzacott" W 454
the "Best Buy"
... in ...

Orchard Power Sprayers

- ◆ **ENGINE**—4 h.p. "Buzacott" Vertical Hopper Cooled.
- ◆ **PUMP**—Twin cylinder, totally enclosed, stainless steel lined cylinders and with efficient pressure regulator.
- ◆ **AGITATOR**—Double propeller rotary type—drive chain enclosed in dust proof cover.
- ◆ **CAPACITY**—Vat holds 100 gals. and plant is capable of operating 6 "Rosebery" power nozzles at 350 lbs. pressure or 2 "Edgell" Spray Pistols at 350 lbs. pressure.
- ◆ **CONSTRUCTION**—Simple but solid and reliable. Vat of specially treated timber—all steel welded frame—robust axle and axle supports—sheet metal side shields—heavy roller chain drive with sheet metal housing.

All these and many other features make the W454 supreme in the field of Orchard Power Sprayers.

Write for the booklet "Still Another Step Forward" giving details of this and other orchard spraying outfits and it will be sent post free by return.

ASK for details of B-W Implements

Offset Tandem Tractor Disc Cultivator illustrated is typical of the new range of B-W Orchard Implements.



CLASSIFIED INDEX OF ORCHARD PESTS AND DISEASES (Continued).

Description of Pests as Illustrated.

Orange Moth.—The larvae of this moth feed on the leaves and young shoots, and are very destructive. The caterpillars of this moth destroy young flowers, buds and young shoots or Orange and Lemon, as well as the foliage.

Painted Apple Moth.—The caterpillars are covered with dark grey tufts of hairs on back near tail. They do great damage by eating the epidermis or surface of the leaves, also young shoots. These moths often appear when the flowers of Apples, Pears, Quinces, etc., are commencing to show. It may therefore be necessary to spray early.

Pear Phytoptus or Pear Leaf Blister Mite.—These mites, by sucking away the juice of the leaves, cause them to turn brown and nearly black. Also attacks fruit.

Phylloxera.—Attacks leaves and roots, growth becomes stunted, and leaves turn yellow.

Potato Blight (Irish).—Attacks Potatoes, Tomatoes, etc. The first indication seen on the leaf is a slight reduction in the intensity of the coloring matter, followed by the appearance of the brownish blotches at the edge of the leaf. In humid weather they spread with immense rapidity. The disease travels down the haulms, and the plant may within a few hours become a blackish mass, emitting an evil odor. Wet seasons favor the disease.

Powdery Mildew.—A serious disease, which attacks leaves, shoots, blossom-buds and fruits of Apples and Pears. Leaves and buds become covered with glistening white masses; fruit is disfigured and small.

Prune Rust.—Attacks Plum trees. Golden yellow pustules on young wood form cracks; sometimes twigs die. Hard scabs form on fruit—useless for canning. Leaf injury means poor crop next season.

Methods of Control of Insect Pests

(28) **ORANGE MOTH** (*Conogethes punctiferalis*).—Spray with Arsenate of Lead when observed.

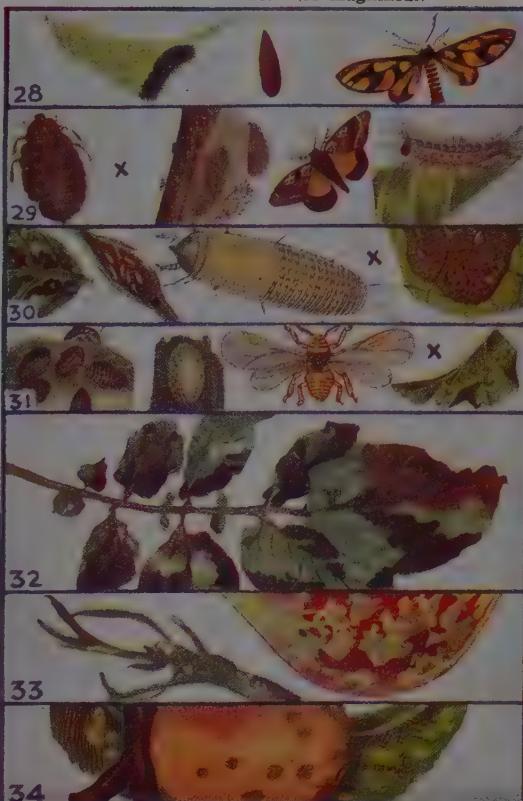
(29) **PAINTED APPLE MOTH** (*Teia anaroides*).—Attacks fruit trees, also garden plants and shrubs. Spray with Arsenate of Lead, same as for Codling Moth (see No. 11).

(30) **PEAR PHYTOPTUS OR PEAR-LEAF BLISTER MITE** (*Phytoptus pyri*).—Spray in spring, when buds commence to swell, Red Oil, 1-25, or Lime-Sulphur: the latter assists in checking Black Spot.

(31) **PHYLLOXERA** (*Phylloxera vastatrix*).—Plant Phylloxera resistant vines.

(32) **POTATO BLIGHT [Irish]** (*Phytophthora infestans*).—Spray with Bordeaux Mixture, 8-10-40. Commence spraying when the plants are from 4in. to 6in. high, and continue to spray every 10 days or two weeks, making in all five or seven sprayings. Use at least 80 lbs. pressure

Pest or Disease. (X magnified.)



and Plant Diseases (illustrated above).

to the square inch, and the three-nozzle arrangement, so that the spray will be thrown each side as well as on top. For Potatoes, use clean seed dipped in Formalin.

(33) **POWDERY MILDEW** (*Podosphaeria leucotricha*).—In winter, prune off and burn infected shoots. Spray with Lime-Sulphur, 1-30, between open cluster and pink stage; Precipitated Sulphur, 10-10, at petal fall, and again (with the last-named spray) early in January. If disease is troublesome, middle of February.

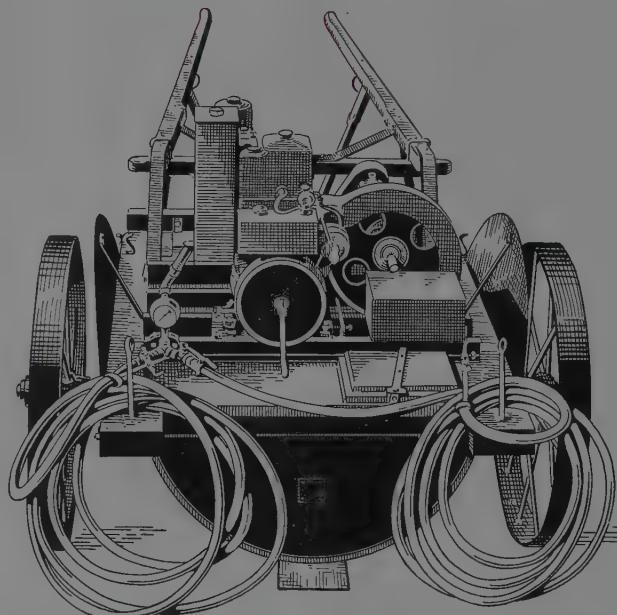
(34) **PEACH RUST** (*Puccinia pruni*).—Spray Bordeaux, 6-4-40, at the pink bud stage and follow with Dry Mix Lime Sulphur as for Brown Rot.

DUSTING.

The method of dusting trees with insecticides and fungicides instead of, and in addition to, spraying, has met with favor. Points claimed in favor of dusting are its efficacy, ease of application, and consequent saving of labor; the dual application of powdered insecticides and fungicides in one operation.

In vegetable and flower culture dusting is quite an accepted practice.

The BAVE-U Power Sprayer



- UNDERSLUNG MODEL as illustrated, Fitted with U-Vat (100 gallons), Trailer Type Springs, Axle slung underneath and not through vat, Mudguards, ample clearance.
- Also supplied with standard Transport Single acting, duplex and trip-plex models.
- Prices of Stationary Plants on application.

Built for a Lifetime of Service

ENGINES (a) 4.H.P. 2 stroke, 450 r.p.m. crankshaft fitted with roller bearings, crankcase totally enclosed, only 3 internal moving parts.

(b) $2\frac{1}{2}$ b.h.p. 4 Cycle, 800 r.p.m. crankcase totally enclosed. Positive Lubrication system.

No Grease Cups used on these Engines.

PUMP: Totally enclosed and runs in an oil bath. Oil fed to moving parts by Oil Pump. Pump Shaft mounted on Ball Races. Stainless Steel Plungers, Ball Valves and Seats. Automatic Pressure Unloader. Fitted with Inverted Strainer

ALL MODELS CAN BE FITTED ON PNEUMATIC TYRES.

RUSSELL BURROWS Pty. Ltd.

Manufacturers of POWER SPRAYERS for Over 30 Years.

BOX HILL, E.11

VICTORIA

CLASSIFIED INDEX OF ORCHARD PESTS AND DISEASES (Continued).

Description of Pests as Illustrated.

Red Mites, Bryobia, Etc.—The young mites are red, becoming brownish when fully grown. This species is larger than the common so-called "Red Spider." Eggs red, globular, these are often deposited on young fruit spurs and garden foliage.

Red Scale of Orange.—A small reddish brown scale insect; attacks fruit, leaves and branches, also Roses and garden shrubs; spreads very quickly.

Red Spider.—The sap is sucked by numbers of these insects from the leaves, causing them to turn yellow. It is difficult for the amateur to locate the pest until a certain amount of damage is done.

Root Borer.—The grub attacks trees by tunnelling along the roots, and the beetle by eating the leaves. The beetle climbs the tree, fastens the leaves together with a gluey substance, and then lays her eggs. When hatched the young grubs drop to the ground and feed on the roots. The pest usually appears on the leaves for feeding in the spring.

Root Rot (Armillaria Mellea).—A destructive root fungus, which attacks all fruit trees and many garden plants.

Rutherford Bug.—These plant bugs insert their beaks or rostrums into the fruit and extract the juice, causing the fruit to wither, become dry, and perfectly useless; they also attack flowers and vegetables, sucking the sap and causing the plants to wither. Usually appear in the summer.

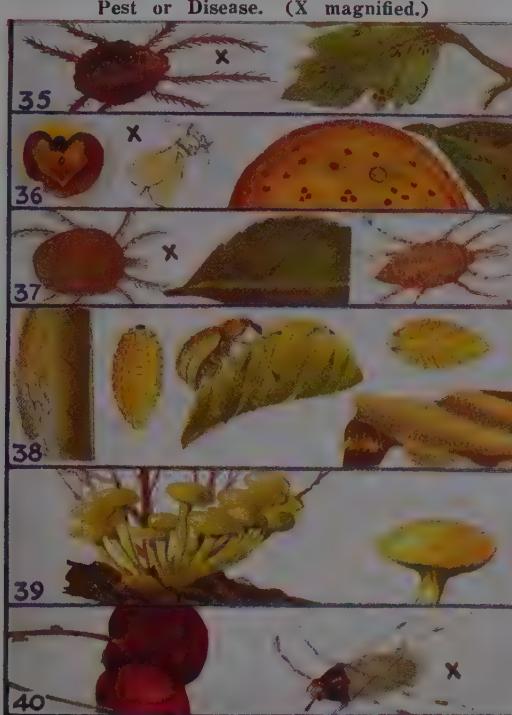
Methods of Control of Insect Pests and Plant Diseases (illustrated above).

(35) **RED MITES, BRYOBIA, Etc. (*Bryobia pratensis*).**—They attack fruit trees, also garden plants, flowers, vegetables, etc. Spray with Lime-Sulphur or Red Oil, 1-20, when buds commence to swell. If mites are present on leaves in summer, spray with White Oils or Nicotine Solutions.

(36) **RED SCALE OF ORANGE (*Aonidiella auranti*).**—Spray same as for Lemon Leaf and Peel Scale. When young are hatching in summer Tobacco Sprays could be used. Fumigate.

(37) **RED SPIDER (*Tetranychus telarius*).**—Same as for Red Mites. (See No. 35.) For Red Spider on beans spray as above or dust with finely powdered sulphur.

(38) **ROOT BORER (*Leptops squalidus*).**—Attacks Apples, Pears, vines, etc. Place a $3\frac{1}{2}$ in. zinc band round tree trunk 18 in. from ground. Destroy all beetles observed. Keep orchards clean in the spring, as the insects lay their eggs on weeds, leaves, or suckers. Spray with Arsenate of Lead. Hymenopterous (wasp) parasites are valuable. Jar the trees over a blanket; gather and destroy the beetles.



(39) **ROOT ROT (*Armillaria mellea*).**—Remove and destroy affected trees in order to prevent the disease spreading and dress the soil with Sulphate of Iron and Quicklime before replanting.

(40) **RUTHERGLEN BUG (*Nysius vinitor*).**—Spray with Benzole Emulsion, Nicotine Solutions, when the bugs appear in young state. Apply Pyrethrum or Nicotine Dust. Keep down weeds. Smudge fires will drive them away from orchards.

Mealy Bug (*Pseudococcus longispinus*).—Small destructive insects; light yellow to grey, covered with powdery substance. Spray with tobacco preparations, or benzole emulsion.

Pear Root Aphis (*Eriosoma pyricola*).—Closely allied to woolly aphis; the former works entirely underground. Scatter paradichlorobenzine (P.D.B.) on surface of soil and dig in, or place in hole 6 in. deep excavated around tree. Use 3 to 10 oz. P.D.B., according to size of tree. Dip young trees before planting in tobacco water or red oil solution.

The Dicky Rice Weevil attacks citrus trees. Spray with arsenate of lead, 1-20, as soon as observed (generally early in November).

"REGA"

THE WORLD'S BEST

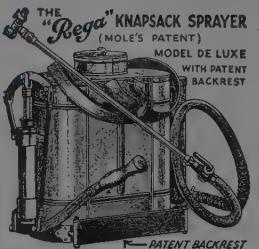
Illustrating a few of our lines

A Complete Range of—

ATOMISERS, BUCKET PUMPS, GARDEN
SYRINGES, KNAPSACKS, BARREL
SPRAYERS, DUSTERS, etc.

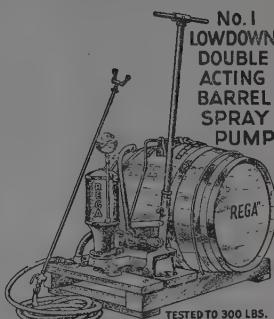
"REGA" Knapsack Dust Sprayer,
force-fed; 600 cubic inch bellows
capacity. Weight: 18 pounds.
Capacity: 15 pounds. The most
powerful one-man Duster built
to-day.

HIGH-CLASS Spraying Equipment



This is without doubt the finest Knapsack of its kind in the world. The lever system employed gives tremendous power to a long, pump, ease of action, and high pressure. An important feature is the patent overflow valve above the plunger, which does away with the unpleasant leakage of liquid from the stuffing box, which usually finds its way to the operator's clothes.

Can be obtained lead coated for acids.



The Double Acting Rocking Type Pump. The Plunger Rod is solid brass; the Plunger Bucket is fitted with two die-formed cupped leathers. Four brass Drain Cocks are fitted to the Cylinder to run the water off where damage from frost is feared. The Suction Strainer is strong and easily dismantled by means of bayonet catches.

The Agitator is mechanical, fixed to the barrel as illustrated, and to the handle by a Link, works backward and forward at each stroke of the Pump, the whole being detachable. Test.—Every machine sent out has been subjected to a guaranteed gauge glass pressure test of 300 pounds per square inch.

CONCRETE—Use "ARC" Brand Geelong



Clean, Tidy Conditions and Improved Property Values.

CEMENT Around the Orchard

Pamphlets with Complete
Construction details of
Pathwork, etc., available
Free on Request.

Australian Cement Ltd.
Temple Court
422 Collins St., Melbourne, C.1.

Telephone: Central 1771 (4 lines).

CLASSIFIED INDEX OF ORCHARD PESTS AND DISEASES (Continued).

Description of Pests as Illustrated.

Pest or Disease. (X magnified.)

San Jose Scale.—Attacks fruit trees—Pear, Apple, Cherry, Plum, Apricot, etc., also Roses, shrubs and hedge plants. A small scale insect of light orange color; attacks trunk, limbs, foliage and fruit. Is very destructive. When Apples and Pears (fruit) are attacked, light red rings appear on the fruit around the scales.

Scab of Orange and Lemon.—Lemon Scurf, dingy white scurfy patches. Grey scab of Orange, the patches are flat, almost round, and break up into minute flakes. Greyish-brown scab of the Lemon occurs on both ripe and green Lemons. False Melanose is another form of scab.

Shot Hole.—Attacks blossom, leaves, twigs and sometimes fruit of Apricot, Cherry, Plum, etc. Blossom infection looks like frost injury. Leaf infection occurs very early, often reducing leaves to skeletons. Gum often exudes from ruptured bark. Scabbiness appears on Apricot fruit.

Slug of Pear and Cherry.—The larvae attack the leaves, doing serious mischief by devouring the skin of the upper side of the leaf. The underside is left untouched, and turns to a deep brown color. They attack the tree mainly in late spring, when the foliage is young.

Strawberry Beetle.—In November and December these insects do most damage; the beetle attacks the leaves and flowers, and the larvae bores into the plant.

Thrips.—One of the worst insect pests. All kinds of fruit, flowers and vegetables, especially Onions, are attacked.

Tomato Moth.—The eggs of this moth are deposited on leaves and stem. The young larvae crawl up the stem and eat their way at once into the flesh, which is destroyed. There is scarcely any limit to the number of plants this pest will attack, cereals, maize, vines, garden plants, etc.

Methods of Control of Insect Pests and Plant Diseases (illustrated above).

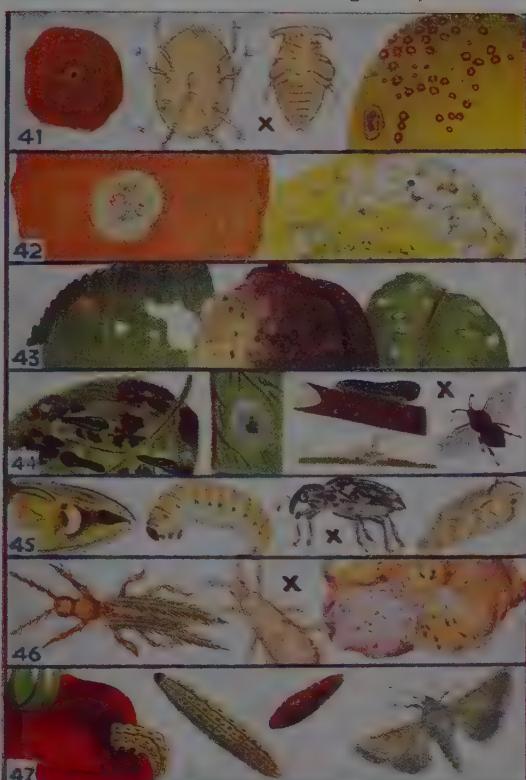
(41) **SAN JOSE SCALE (Aspidiotus perniciosus).**—Burn all prunings promptly. Spray in late winter with Red Oil, 1-20 or Lime-Sulphur, 1-10. In summer, when scales are moving, spray with White Oils or Nicotine.

(42) **SCAB OF ORANGE AND LEMON.**—As this disease attacks new growth, spray with Bordeaux (3-3-50), to which has been added 1 per cent. of Red Oil, before the new growth begins.

(43) **SHOT HOLE (Coryneum Beijerinckii).**—Spray Bordeaux, 6-4-40, before leaves fall in autumn; 6-4-40 at "pink" stage. Use lime casein spreader with the Bordeaux mixture.

(44) **SLUG OF PEAR AND CHERRY (Caliroa limacina).**—Cherry, Peach, Quince, Plum and other trees are attacked. Spray with Arsenate of Lead. The first spray for Codlin usually kills the Pear Slug. Spray unbearing trees or Hawthorn hedges if necessary. Dust with lime, powdered Lead Arsenate, Sulphur, ashes, or sand.

(45) **STRAWBERRY BEETLE (Rhinaria peridix).**—Spray with Arsenate of Lead before fruit is ripening. As a deterrent, spray with Benzole Emulsion.



(46) **THIRIPS.**—When not in plague numbers, thrips do not seriously affect fruit crops. Scientific investigations prove that plague infestations as well as freedom from the pest, can be forecast from the numbers of insects present in the autumn and early spring. Pyrethrum and derris dusts kill thrips and act as repellants for two days with each application.

(47) **TOMATO MOTH (Heliothis armigera).**—Use poisoned baits, bran and arsenic, also Arsenate of Calcium. Spray with Arsenate of Lead or dust with powdered Arsenate of Lead. Keep soil around plants well forked.

FUMIGATION.

Fumigation with Hydrocyanic Acid Gas kills red scale of citrus trees and various other scales and pests. In Victoria fumigation is compulsory. Tents are placed over trees, calcium cyanide dust, 1 oz. per 100 cub. feet, is forced in by means of a hose and blower. On being released to the air hydrocyanic acid gas is formed. This has largely superseded the "pot" method of mixing cyanide, sulphuric acid and water.

Fumigation is done (on still nights) from late December to early June; the temperature should not be below 50 deg., and humidity should not exceed 80 degrees.

CLASSIFIED INDEX OF ORCHARD PESTS AND DISEASES (Continued).

Description of Pests as Illustrated.

Transit Rot.—Attacks fruits only through skin injury. It appears as a cottony mould, at first white, but quickly changing to black. The fungus produces a rot which at first is brown and quite firm; then the cells rapidly break down and the fruit becomes a watery mass.

Vine Hawk Moth (Silver Striped).—The caterpillar of this moth strips the vines of their leaves in a very short time, even quicker than the caterpillar of the Vine Moth.

Vine Moth.—The caterpillar, or larvae, of this moth attacks the leaves and young Grapes, also Virginia Creeper, and will very quickly denude the vines and creepers of their foliage.

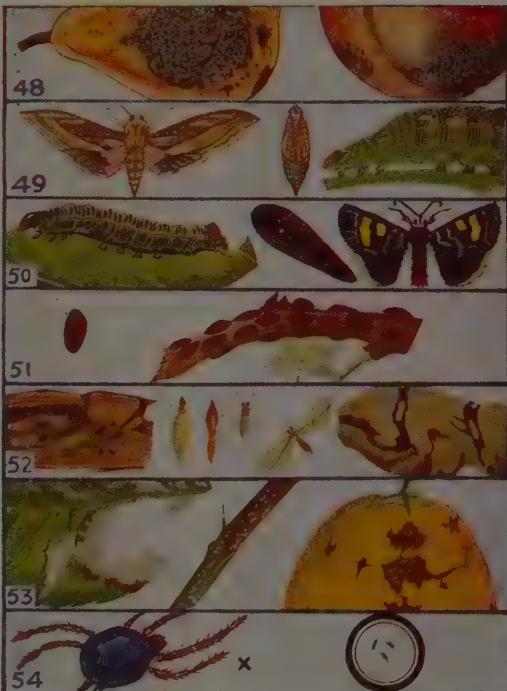
Vine Scale.—One of the largest scales infesting plants. Attacks vines, Jap. Plums, etc. This scale has become a pest in flower gardens. Many kinds of creeping plants, viz.:—Tacsomia, Mandevillea, Cobaea, etc., being attacked.

White Ants.—This destructive pest attacks timber trees, vines, Apricot, Orange and Peach trees, also furniture, etc.; is a very serious enemy.

Wither Tip of Orange and Lemon.—Often called "Die-back," as twigs die from the top downwards. ("Dieback" of Apple trees may be associated with this disease.) On the undersurface of the leaf whitish grey blisters arise. The leaf withers at the tip and is gradually destroyed; blotches appear on stem.

Pea Mite.—A serious pest. The body of this mite is dull blue. They have rather long red legs. They run very rapidly when disturbed, and soon get out of sight, hiding in crevices or under lumps of earth.

Pest or Disease. (X magnified.)



Methods of Control of Insect Pests and Plant Diseases (illustrated above).

(48) **TRANSIT ROT** (*Rhizopus nigricans* Ehr., *Rhizopus arrhizus* Fisch).—Handle fruit carefully, preventing skin injury. Sterilise cases in boiling water. Spray shed interiors and all wood-work with 1 lb. bluestone to 5 gallons water. After picking and packing, pre-cool fruit immediately for two days at 35 deg. F., and transport to market in iced insulated trucks or louvre trucks.

(49) **VINE HAWK MOTH, SILVER STRIPED** (*Chærocampa celerio*).—Spray with Arsenate of Lead, whenever observed.

(50) **VINE MOTH** (*Phalaenoides glycine*).—Spray with Arsenate of Lead, whenever observed. Keep soil at the foot of the vines worked up to destroy chrysalids in soil.

(51) **VINE SCALE** (*Eulecanium persicae*).—Sprays same as for Olive or Black Scale. Spray in summer when young are observed with Tobacco extract.

(52) **WHITE ANT OR TERMITE** (*Termes lacteus*).—Apply Manurial Insecticides to roots. Inject Carbon Bisulphide if nests located.

(53) **WITHER-TIP OF ORANGE & LEMON** (*Phoma omnivora*).—Prune out all diseased

wood and spray with Bordeaux Mixture (6-4-40) or Copper Soda (6-9-40).

(54) **PEA MITE** (*Penthaleus major*).—Attacks Peas, Onions, Potatoes, Beans, Beet, etc., also flowers. When mites appear, plough deeply and destroy all weeds, particularly Capeweed as the mites breed on these. They will not live for any length of time on clean cultivation, but fairly quickly migrate across it from pasture paddocks, dirty headlands, etc. Any plot freed from mites by cultivation or other treatment may be kept free by placing a trail of Creosote, or a mixture of Kerosene and Phenyle, about four inches wide, right across the plot. The mites will not be able to cross this for a few weeks.

Take 1 part of Carbolic Powder (15 per cent.), 3 parts Lime, Super. of Gypsum, and broadcast over the plants, and work into soil at the rate of 2 cwt. per acre.

Tobacco Dust and Lime in equal quantities have been used in a similar way with some success by market gardeners. Manurial Insecticide used at the rate of 1½ to 2 cwt. to the acre has also been fairly effective in some parts.

Spray with Nicotine solutions.
Dust with Nictar dust.

Soil Fertility in the Orchard

IMPORTANCE OF GREEN MANURING — MANURING REQUIREMENTS OF TREES — RESULTS OF EXPERIMENTS — SYMPTOMS OF DEFICIENCY — BALANCED FERTILIZERS — GOOD ORCHARD SOIL MANAGEMENT ESSENTIAL.

(By Frank M. Read, M.Agr.Sc., Chief Inspector of Horticulture, Victoria.)



THE EFFECT OF THE WAR on certain primary industries, particularly in some countries, will be to increase the obvious importance of maintaining soil fertility and a high level of crop production. In Australian horticulture this will be true of those crops, the disposal of which, at satisfactory prices, is already assured or is not likely to present great difficulty. There are, however, parts of our fruit industry in this country whose economic outlook though, by no means black, is obscure, and there seems a possibility that the growers concerned may attempt to economize at the expense of soil fertility because the importance of its maintenance is less obvious to them than, for instance, pest control.

It is clear that if prices become unfavorable money will not be normally available to the fruitgrower with which to conduct orchard practice along the best possible lines, and it would be futile to give the general recommendation to growers that they should adopt a liberal manurial practice. Where growers, however, are in the position, even at some sacrifice, to purchase normal quantities of manure, they would be certainly advised to do so, and where they are not in such a position, it would seem wise for the authorities to consider some special form of accommodation or assistance to ensure that soil fertility in our orchards is not permitted, over a period of years, to decline seriously. This would be serious enough with annual crops, and it is obviously much more so with large perennials such as fruit trees.

The application of artificial fertilizers, nevertheless, is not the only, nor indeed the most important, aspect of soil fertility, and it is to be hoped that growers will consider the following general discussion and make the best possible use of the financial resources available and give even greater than ordinary care to other aspects of good orchard practice, which may assist in meeting any deficiency in this direction.

It is not possible to give in general terms details for every orchard property. While the grower must largely decide the details himself, he has at his call the services of the local Supervisor and of his Department of Agriculture, and he should avail himself of the personal advice to be obtained from these quarters.

Everyone is agreed that, for an orchard to maintain fertility, the

supply of organic matter

must be maintained. In the natural state the soil supports a varied population. There are first of all the trees, secondly beneath them are the surface plants, and within the soil are the teeming millions of tiny creatures, far too small to be seen by the naked eye, and known under the general name of soil organisms.

:: :: ::

RICHARDING, as it is generally practised in Australia, by clean cultivation and frequent stirring of the soil in the hot Summer months, undoubtedly tends

to upset the balance of nature by the elimination, or, at all events, great reduction in the growth of the second group, the surface plants. The life and decay of the surface plants provides most of that organic matter which is required by the soil organisms in order that they may flourish, and it therefore follows that as the surface plants are reduced and the soil organic matter or humus is depleted the soil's population of organisms declines. The gravity of this change may be understood when it is realised that it is principally due to the life processes of the soil organisms that the soil nutrients become available to the trees, and so, as their number falls, soil fertility inevitably declines also.

It can therefore be taken as a maxim that the yearly ploughing under of a liberal amount of green stuff is a first essential in orchard management, and it is almost as true that where the growth of natural green stuff is abundant and is ploughed under suitably, the position on that orchard is generally quite satisfactory.

:: :: ::

Importance of Green Manure.

There would appear to be three main methods of providing soil humus in addition to the application of farmyard manure and straw, and so on:-

1. We can sow a crop of Peas, Beans, Oats, Barley, Rape, or, in fact, any crop which will grow well and give a good bulk within a few months. In general, the leguminous crops are preferable when they will grow strongly; but if they will not thrive the crop most suitable to the district should be sown. It is essential that such a crop be sown early, so that it secures a good start before the cold weather comes. March is the best month from this point of view. I know many orchardists will say that they rarely have time to put in a green crop, and that, any way, harvesting operations extend into March, and later still, so that if a crop were sown it would be trampled on and spoiled. It is undeniable that some orchardists do, nevertheless, manage to sow the crop satisfactorily, generally by doing alternate rows in alternate years so that there is still room to reach every tree without walking or driving over the same area.

2. We can establish such a plant as Subterranean Clover, which will reseed itself naturally. This has been done with apparently satisfactory results. There does not appear to be much difficulty in reseeding Subterranean Clover when it is ploughed under, as is the general rule at present, in September or later, for the plants go on maturing after ploughing, and until the surface is broken down by the cultivators and harrows. But the tendency in many districts now is toward earlier ploughing to avoid ascospore infection in the control of black spot of Apples, to improve conditions for fruit setting, and to minimise competition for soil moisture between trees and green-stuff, and so on. If this desirable tendency be followed,

SOIL FERTILITY IN THE ORCHARD—(Continued).

therefore, it would be wise to leave the unploughed strips of Clover between the trees until the seed has formed.

3. The third alternative which may be useful as a stop-gap, but which would not appear to be as permanently satisfactory as the two above, is to allow the miscellaneous herbage to grow by ceasing cultivation in late February or early March. This can probably be encouraged by top-dressing with artificial fertilisers in Autumn. Super, 2 cwts. per acre, or sulphate of ammonia, 1-2 cwts. per acre, have in general given most noticeable results to date. The final choice between these two fertilisers should be made after trial. On the whole, super. tends to be more generally effective for this purpose in the northern orchards, while a nitrogenous manure, such as sulphate of ammonia, is more usually effective in the south of the State. These results, however, depend largely on the type of herbage. Clovers seem to prefer super., while Capeweed responds more usually to nitrogen. The results from grasses are variable.

Which Fertiliser Makes Fruit?

THE GROWER TOO OFTEN bases his manurial practice on his estimate of the loss to the trees and the soil occasioned by the taking off of succeeding crops. This is quite an unreliable method, for it can be taken that, as a general rule, comparatively little of the soil nutrients go into the actual crop, most being required to develop the framework and other growth features of the tree.

"Which fertiliser makes fruit?" is a question sometimes asked by growers. In answer it may be said that no fertiliser makes fruit as distinct from growth, but that any one or all of the fertilisers may affect the growth characters of a tree, and thus indirectly affect its yield.

There are very good grounds for believing that if tree growth be satisfactory, yield automatically will be so; from which it would follow logically that growers should decide their manurial practice more upon the appearance

*Any good !!!
look at the
AMMONIA
in it!*

When you buy manure for orchard or market garden use, note carefully on the tag how much ammonia it contains, for ammonia is the GROWTH element that improves yields and increases profits.

SULPHATE OF AMMONIA

is the principal source of supply of ammonia in fertilisers. It gives the necessary nitrogen balance to mixed fertilisers, or can be used "straight" throughout the season as a top or side dressing.

Ask your Agent for prices of Mixed Fertilisers, but see that they contain sufficient ammonia.

NITROGEN FERTILISERS PTY. LTD., 360 Collins Street, Melbourne, C.I.

SOIL FERTILITY IN THE ORCHARD—(Continued)

of their trees, and less upon the crops they have borne or are expected to bear.

Where fertilisers further a more healthy growth and appearance in trees previously unsatisfactory in health, they usually improve the yielding capacity of the tree also. When tree health suffers, the grower must apply fertilisers to conserve his main asset.

It is not intended to convey the impression that increased growth in all cases will be accompanied by increased yield. This would only be so in trees previously showing too restricted growth. The most fruitful condition in fruit trees is one of medium growth, with good healthy appearance of leaves and wood.

The subject may be viewed from a slightly different angle by asking and answering a further question:

"In the event of a shortage of any element is the growth and foliage first affected, or does the yield decline while the tree to all other appearances remains normal?"

The available evidence indicates that the first signs of a mineral deficiency are to be seen in the foliage. Experiments on Apples at Upper Beaconsfield, Vic., on a poor soil, showed that unmanured or improperly manured trees do not make anything like the amount of growth made by those on adjacent manured plots, nor is the appearance of the foliage satisfactory; but during the trials the yields of the unmanured trees did not decline seriously by comparison, although it was obvious that if faulty growth conditions had been allowed to persist they must soon have resulted in low yields from the actual dying back of the trees from the tips. The trials being on a private orchard were discontinued at this stage.

In England the disease known as Leaf Scorch, which has been associated with potash deficiency, has been extensively studied.

It has been found that, in the case of Plums, for instance, the deficiency is marked in leaves and stems, which, when analysed, are seen to contain very much less potash than normal specimens; but this deficiency is not nearly so marked in the pulp of the fruit, while in the fruit kernel of the affected tree the potash content is practically normal—Victorian experience confirms this.

This is a further indication that when the tree is starved of any particular element—in this case, potash—the leaves and shoots suffer long before the vital organs—the fruit, and seed. This is in accord with the effects accompanying starvation of the animal body, where the vital organs remain perfectly sound until a very late stage in the process of starvation, which leads again to the very important conclusion previously mentioned, that if the tree is growing in a healthy fashion it is not likely that the yield of that tree will be increased materially by applications of fertilisers.

On the other hand, it points to the necessity for maintaining healthy growth, for only when that is obtained will the tree continue over a period of years to increase its bearing surface, and thus its ability to carry larger and larger crops.

There are orchards on soil quite rich enough to supply the whole mineral needs of the trees, and on such soils growth will be healthy without manure, while the benefit to be secured from fertilizers would be negligible. There are, nevertheless, many soils which will not give the growth desired, and on these the fertilizers suitable to them will prove of inestimable benefit.

There is room for a great deal of experiment, not only in the trying out of fertilizers on orchards previously neglected, but also on heavily-manured orchards on rich soil, where it would be of great interest to leave some trees entirely unmanured for comparison.

Deficiency Symptoms.

IN THE CASE OF APPLES the experiments conducted in this and other countries enable the appearance of the trees to be used as a fairly accurate guide to the exact fertilizer to be added in each case of faulty growth.

Lack of nitrogen results in very restricted growth, reddish bark, small yellow-green leaves, which develop bright yellow tints before falling and fall, particularly at the base of the tree, very early.

Lack of phosphoric acid under experimental conditions, although it has never been noted in the field so clearly as in the case of nitrogen, results in poor growth, small and very narrow dark green leaves, often quite bronze, with a tendency to develop purple coloured margins. These leaves usually develop very bright tints before falling. They tend to defoliate very early, and bud burst in the spring is usually very delayed. Dying of buds is very prevalent.

Lack of potash does not restrict growth apparently as much as either of the former two, but renders the leaves susceptible to severe scorching around the margins and the development of a flat green colour throughout. It also causes early defoliation from the tips of the shoots on which marginal leaf scorch has been pronounced. This deficiency is apparently very widespread in England, and occurs occasionally in the field in Australia.

Recently, pot experiments on Pears were added to the existing work on Apples, and in the first year, it can be said, the symptoms of deficiency of nitrogen and phosphoric acid seems to be substantially similar to those described for Apples. It is as yet too early to comment on the symptoms in Pears for deficiencies of the other minerals being studied.

Further, several surface plants which occur naturally, as weeds in Victorian orchards or as sown green crops—



Group of visitors at an Orchard Field Day.

SOIL FERTILITY IN THE ORCHARD—(Continued).

comprising: Cape Weed, Sorrell, Oats, Barley, Tick Beans, Peas and Lupins have been subjected to deficiency treatments and on the whole it is striking that they resemble in leaf symptoms Apples, Pears and other plants previously worked with:—

Lack of nitrogen, except in the case of Legumes, Peas, Beans and Lupins produces very restricted growth with small leaves and the characteristic yellow-green leaf colour.

Lack of phosphoric acid causes restricted growth with small narrow dark-green foliage liberally tinged with purplish-red colours particularly around the margins.

It is of great interest and of greater practical importance that the symptoms should be so generally similar over such a wide range of plants. This work is proceeding.

:: :: ::

Balance in Fertilizers.

ONE OF THE MOST IMPORTANT developments of recent years has been the conception of balance in fertilizers, and it appears probable that the balance existing between the various nutrients present in the soil is more important by far than the actual amounts.

As an instance, let us consider leaf scorch of Apple leaves, to which we have referred as a symptom of potash deficiency. Strictly speaking, it appears to be a symptom of bad balance between nitrogen and potash, and it may be corrected by either increasing the potash or by lowering the nitrogen. In certain cases in England the trouble has been corrected more rapidly and more efficiently by simply allowing the grass to grow beneath the trees, and so

lowering soil nitrogen, than by applying to the soil quite heavy applications of sulphate of potash. Several other cases of balance have also been studied, and sufficient is known to support the view previously expressed that balance is a most important consideration.

In practice this is reflected by the great increase in the use of complete fertilizers, and the compounding of these mixed fertilizers along lines which make them much more truly balanced than the type of complete fertilizer to which horticulturists were accustomed, up to, say, ten years ago, or even less.

Minor Fertilizer Elements.

It was freely predicted ten to fifteen years ago, that attention to what are sometimes arbitrarily called the "Minor" elements in nutrition would be repaid by results of value and the prediction is coming true.

The use of Zinc in Southern Australian citrus groves is a case in point. Much of the leaf mottling of citrus is being corrected by the application of Zinc, usually in the form of a spray on the foliage:—

10lbs. Zinc Sulphate.

5lbs. Lime.

100 Gallons Water.

or somewhat less effectively, as an application to the soil of: 10lbs. of Zinc Sulphate per tree.

Quite recent observations suggest that Zinc may give a response in certain northern Victorian areas on Apples too, and incidentally on Wheat.

Again in New Zealand, Tasmania and parts of New South Wales the use of Boron has given striking results in the correction of the conditions associated with internal

FOR BIGGER BETTER YIELDS! AND FOR HEALTHY GROWTH

Chilean Nitrate of Soda

There is no better fertiliser than Chilean Nitrate for healthy growth without impairing the soil's permanent fertility. Chilean Nitrate contains NITROGEN, SODIUM, BORON, IODINE, MAGNESIUM—the vital elements necessary to healthy plant life. Growers are enthusiastic about its economy and effectiveness.

PACKED IN 1 CWT. JUTE,
WATERPROOF LINED, BAGS

Ask your merchant for particulars or write direct to—

CHILEAN NITRATE OF SODA

Agricultural Service, 44 Margaret St., (Box 2037L G.P.O.) Sydney



cork of Apples, when Borax has been applied as a soil dressing, or has been injected into the trees.

General Recommendations.

There is still room for research and improvement of mixed fertilizers. Variation in soil condition from orchard to orchard, and district to district, will make necessary for a long time to come a fair degree of approximation. In Victoria the use of complete fertilizers on pome fruits is on the whole recommended, except in cases where a definite deficiency is established by careful observation. For instance, where tree growth is very poor indeed and leaves are small and yellowish, a nitrogenous fertilizer such as sulphate of ammonia or nitrate of soda may be used alone for a time until the trees improve. Again, if leaf scorch of Apples were to occur seriously the use of potash alone would be desirable until such time as this symptom of potash deficiency had disappeared.

Stone fruits are most responsive to nitrogen, and if their growth is poor, nitrogen alone is the best fertilizer to use; but carried too far, nitrogen manuring on such fruits especially Peaches, tends to a higher susceptibility to such fungus diseases as Brown Rot. When, therefore, stone fruit trees are growing well it would be better to use a complete, rather than a straight nitrogen fertilizer.

For Spring application to deciduous trees, 3-5 lbs. of 2:2:1 mixed manure, which contains 2 parts of superphosphate, 2 parts of sulphate of ammonia, and 1 part of sulphate of potash is to be recommended, except when growth is very restricted and leaves are yellowish. In such cases 3-5 lbs. of sulphate of ammonia is to be preferred for a year or so, until growth improves. The best time is 4-5 weeks before blooming.

Citrus trees respond to nitrogen, and while it is still a matter on which experiments now proceeding may throw a new light, the only fertilizer which can really be recommended is nitrogen applied at a rate equivalent to 3-5 lbs. per tree of sulphate of ammonia in Spring, and again in Autumn, just before the growth periods.

The quantities of fertilizer to be applied will vary with tree size, and the suggestions refer to medium-sized trees.

For Autumn broadcasting or drilling in with the green crop, superphosphate or sulphate of ammonia should be used at the rate of 1 to 2 cwt. per acre, in accordance with the conditions previously discussed.

Where soil humus is maintained in the manner described previously, the most satisfactory type of fertilizer to use is the readily soluble quickly-acting form.

Nitrogen, in the form of sulphate of ammonia; phosphoric acid, in the form of superphosphate; and potash, in either the sulphate or muriate (except in the saline areas, where the muriate should not be used) should, singly or in combination, supply the needs of most orchards. Organic types of fertilizer are more necessary in intensive market gardening.

Use of Lime.

Where green crops or natural herbage show the effects usually associated with sour soil and well-known to growers, dressings at rate of 2 ton per acre on small trial areas might reasonably be tried to see if greenstuff can be appreciably improved.

There is a general belief that lime liberates potash, but it is extremely doubtful if this occurs appreciably in most

Victorian soils and such liberation would not justify the use of lime in this State. If this is the growers objective, he would be better advised to apply potash fertilizer.

Methods of Application.

Having decided on sound lines that one or more artificial fertilizers are required, the grower is still faced with problems of great magnitude, for it does not necessarily follow that by applying them to the soil they are actually caused to be absorbed by the tree's roots. In fact it is certain that very little of the fertilizer applied is so absorbed, even under the most favorable conditions.

There are several reasons for this.

Firstly, the root system of the average orchard tree is situated in a zone some distance from the surface, and the fertilizer must penetrate to this zone through a blanket of surface soil. During its progress nitrogen tends to be rapidly absorbed by the roots of the surface-growing plants, but is otherwise able to move downward without much obstruction.

Phosphoric acid and potash, however, move downward only with great difficulty. Chemical reactions rapidly convert the soluble phosphoric acid into an insoluble form, and the potash, particularly in those soils in which potash is necessary, is absorbed by the clay particles very rapidly indeed, and held there in a form no more available to the tree than much of the potash previously in the soil.

It is important therefore that, in applying fertilizers, they should be placed as deeply as possible, either by being broadcast and then ploughed under immediately, or by being placed in deep furrows.

In short, every means at the orchardist's disposal should be used to place the fertilizer in the actual effective root zone. From this point of view irrigation water, or liberal falls of rain, are of the greatest importance, and should be fully exploited to wash down soluble fertilizers.



An 18-year-old Valencia Orange tree at Griffith, N.S.W.

Intelligent Soil Management.

IN CONCLUSION, a warning should be given that the problems of soil fertility do not reside completely or even mainly in the use of artificial fertilizers. Too often the grower is apt to regard artificial fertilizers as a panacea for all the ills to which orchard trees are heir. But the truth is that at best they are but a subsidiary measure to all those items of good orchard practice and intelligent soil management, which keep the soil in a physical state to afford the trees' root system a congenial and comfortable home.

Summary.

1. Soil fertility is a national problem for the soil is our greatest national asset.

2. The provision of ample humus by one of several means outlined is a pre-requisite of orchard soil fertility in Victoria.

3. The grower should base his manurial practice on the appearance of his trees, and not on the crops they bear.

4. Lack of each fertilizer gives rise to characteristic growth features.

5. Balanced manuring is essential, balance being more

important than the actual amounts of fertilizers present. In this respect a good deal of approximation is still unavoidable.

6. Readily soluble types of fertilizer, such as sulphate of ammonia, superphosphate, and sulphate of potash, are preferred to more slowly available forms.

7. Autumn applications for the benefit of greenstuff may be either 1 to 2 cwt. of sulphate of ammonia or superphosphate, depending on conditions which are discussed.

8. Spring applications should, if possible, be made four to five weeks prior to bud burst of deciduous trees; and for medium-sized trees should consist of 3-5 lbs. per tree of either 2:2:1 mixture or sulphate of ammonia.

9. For citrus, 3-5 lbs. of sulphate of ammonia in Spring, and again in Autumn, is good practice.

10. Owing to the danger of fertilizers being fixed by the soil before they can be absorbed they should be introduced, if possible, into the actual root zone by deep ploughing, or by irrigation or rain water.

11. At best artificial fertilizers can be only a subsidiary measure to those items of sound soil management, which keep the soil in good physical condition.

THE SUPPLY OF SOIL NITROGEN—
THE OLD WAY AND THE NEW.

By R. A. Boyle, M.Sc.

THE MORE INTENSE THE CULTURE, the more does the success of the cultivator depend upon his skilful regulation of the supply in the soil of the plant food nitrogen. In other words, culture may be intensified—i.e., more may be got from an acre of soil, more produce, representing more money—if due attention is paid to, and advantage taken of this now recognised scientific fact.

Let those who have witnessed the effect of a dressing of sulphate of ammonia given to a plant in a garden or orchard that had been allowed to become low in fertility—imagine such an effect having been produced by an ancient Roman who had accidentally applied the same substance—then, of course, of unknown composition—and consider his reaction—his amazement, his suspicion of magic, and most probably his desire to retain his discovery as a closely-guarded secret. Of course no substance with anything approaching the nitrogen content of sulphate of ammonia was known in those days, or until the deposit of nitrate of soda was discovered in Chile early last century. And yet it was just as necessary to keep an intensely cropped soil well supplied with nitrogen in the earliest days as it is nowadays, and yet, no doubt, culture was as intense and yields as great as they are to-day.

We now know that before the advent of fertilisers the nitrogen supply was maintained, without any scientific awareness, entirely by returning to the soil organic matter, which in turn gave back to the soil the very nitrogen which it had once directly or indirectly derived therefrom.

The grower of those days was, however, in this regard much like the pioneer who selected a portion of the Gippsland forest, 50 years ago, and was concerned with the supply of fuel for heat and warmth. He has had to turn from armfuls of dry faggots gathered outside his door, to electricity at a cost from Yallourn, just as the intense culturist has had to pass from merely shovelling up manure from his and his neighbour's stock to the purchase of sulphate of ammonia. There is no need to go into details as to why such transitions had to occur, except

to wonder whether any of us would like to return to the conditions of the forest or the ancient *Agricola*.

But we must not push the analogy between nitrogen and fuel requirements too far, because whereas wood can be replaced entirely by electricity for heat and warmth, organic matter supplies other essentials than nitrogen—some not even understood—and science has not yet found any suitable means of doing without it.

We do know this, however, that the amount of organic matter that the ancients used to have to supply in order to get sufficient nitrogen was more than enough to furnish all the other essentials supplied by that substance. For instance, it takes 3 or 4 tons of stable manure to supply as much effective nitrogen as not much more than 1 cwt. of sulphate of ammonia. So the skilled gardener or orchardist of to-day gives his land a smaller dressing of animal manure or incorporation of green manures, sufficient only to furnish the essentials other than nitrogen, and then supplements the amount of the latter to a nicety by more timely applications of a concentrated nitrogen container, like sulphate of ammonia.

Whether this extra nitrogen should be supplied as "straight" ammonia, or in a fertiliser mixture like the 2:2:1, would depend upon the crop, and how much phosphate and potash had been supplied in other ways. Leafy vegetables and citrus trees require more nitrogen than root or deciduous fruit trees. Organic matter with perhaps a little super and potash, plus liberal dressings of sulphate of ammonia for the former, should be replaced by organic matter, and some super plus a balanced fertiliser like the 2:2:1 at sowing, or in the Spring for the latter.

In the orchard or garden, therefore, when growth and production are not as satisfactory as they might be, the soil's supply of available nitrogen should be one of the first suspects, and thanks to the soil scientist and chemist of modern times, a determination is easily made, and the fault, if there, readily corrected by a sprinkling of sulphate of ammonia.

Such sprinklings of sulphate of ammonia, "straight" or in mixtures, throughout the world to-day amount to about 5 million tons per annum, whilst if all other forms of artificial nitrogenous fertiliser are taken into account, it would take 10 million tons of sulphate to supply the same total quantity of nitrogen.

The Manuring of Citrus Trees

Nitrogen the Main Essential.

FOUR-FIFTHS of the atmosphere consists of an inert gas known as nitrogen, and although this element is of fundamental importance for the normal growth of all plants, there are only relatively few crops, such as Beans, Peas, Lucerne, Cowpeas, Soybeans, Vetches and Clovers, etc., that can utilise atmospheric nitrogen. These crops in common with all other legumes have small nodules or galls on their roots which contain certain types of bacteria that are able to utilise green nitrogen, thus fixing it and rendering it available for the use of other plants.

Under Australian conditions, nitrogen is the most important nutrient factor governing the profitable production of high-grade citrus fruit and the successful orchardist knows that every care must be taken to ensure that an adequate supply of this element is available to his trees.

The growth and subsequent ploughing under of green manure crops such as New Zealand blue lupins and Poona cowpeas is a valuable aid in increasing the nitrogen content of the soil, and in addition it adds valuable organic matter to many soils that are deficient in humus. Superphosphate greatly stimulates the growth of most legumes such as lupins and cowpeas and an application of two cwts. per acre at the time of sowing the crop is to be recommended. It has been found also in many cases that the addition to the superphosphate of 1 cwt. of a quick acting nitrogenous fertiliser such as Chilean nitrate of soda has a marked beneficial effect in promoting a vigorous early growth of the cover crop.

Citrus trees are evergreen and remain more or less

active throughout the year, and since they are commonly heavy croppers it is obvious that they require a considerable amount of plant food to maintain them at their maximum production.

It is advisable to make two applications of artificial fertilisers each year, so that an abundance of nutrient material will be available at the commencement of the two main growth periods. The first dressing should be given in the early Spring and the second application should be made about three months later.

Seven cwts. of Chilean nitrate of soda should be mixed thoroughly with 1½ cwts. of sulphate of potash, and ¼ of a pound of this mixture should be applied for each year to the tree's age up to a maximum dressing of 15 lbs. per tree for old trees. A four-year-old tree should thus receive 3 lbs. of the mixture and a 12-year-old tree 9 lbs.

The fertiliser mixture should be spread out evenly on the soil beyond the outer fringe of foliage and then worked in thoroughly with the plough or cultivator. It should never be placed around the butt of the tree as the main feeding roots extend for a considerable distance.

Chilean nitrate of soda is one of the most satisfactory sources of nitrogen for citrus and other fruits as it has high content of readily available nitrogen which can be absorbed and utilised by the trees. It is particularly valuable on acid soils such as exist throughout the coastal citrus-growing areas of New South Wales, since it is alkaline in reaction and its continuous use therefore is also beneficial in preventing further increases in soil acidity.

Chilean nitrate of soda is a natural product and during recent years its sale has shown a remarkable increase throughout the world. For the five year period prior to last year, sales of Chilean nitrate increased by 91 per cent. Further increases may be expected as more and more growers recognise the value of this excellent fertiliser.

GROWERS: Consign Your Fruit to—

**JAMES SLATER PTY.
LTD.**

Licensed Farm Produce Agents

21 City Markets - - Sydney

Postal Address: Box 36, Haymarket, Sydney.

Established 1882.

Bank Reference: Commercial Banking Co. of Sydney, Haymarket.

CHEQUES RENDERED WEEKLY.

**SPECIALIST IN STRAWBERRIES AND ALL OTHER CHOICE
FRUITS. ALL VICTORIAN FRUITS AND NUTS HANDLED TO BEST
ADVANTAGE ON THE SYDNEY MARKET**

Shipping Nos. 19 & 88.

Stencils, Advice Notes, etc., on Application.

PHONES . . . MA 2920 and LU 2711.

Dried Fruits

The Australian Dried Fruits Industry

72,000 Tons Produced in 1939, of which 56,000 Tons were Exported

5,500 Growers are Cultivating 57,389 Acres of Vines for Dried Fruits

40,000 People Depend for Their Living on the Industry

THE IMPORTANCE of the Dried Fruits industry to Australia will be more fully realised on studying the fifteenth annual report of the Commonwealth Dried Fruits Control Board, a summary of which is published hereunder:—

In presenting this report to Parliament, the Minister for Commerce (Senator The Hon. G. McLeay) states:—

"Established in 1925 at a time when legislation was called for to deal with the relatively small export surplus of Currants, Sultanas and Lexias, the rapid expansion of the dried fruits industry in four States has resulted in a position where over 80 per cent. of the present production is exported from the Commonwealth.

"Success is due to the operation of Imperial and Dominion preferences and the ability of the members of the Board."

..

The report gives the following information:—

Personnel.

The elected members are:—Messrs. A. Yeates, O.B.E. (W.A.), L. McLeod (N.S.W.); H. D. Howie (S. Aust.), P. Malloch (Vic.), E. J. Casey (Vic.). Members nominated by the Commonwealth Government: Messrs. W. C. F. Thomas, C.B.E. (Chairman), J. B. Murdoch, Alex. F. Bell, C.M.G.

The death of Mr. A. L. Johnstone was deeply regretted.

Production and Exports.

The estimated production for the year 1939 is 72,000 tons. (In 1925 the quantity produced was 24,528 tons.)

Adverse seasonal conditions had an effect on the production of 1939. A fall of practically 20,000 tons will be noted in comparing the harvests of 1938 and 1939.

Heavy rainfall in February, 1939, caused a loss to the industry of at least £A600,000, apart from additional losses occasioned by the reduction of immense quantities of fruit of three and four crown standard to one and two crown standard.

The influence of this alteration in quality cannot be computed with accuracy, but it is reasonably safe to

estimate that this falling off in grade probably reduced the total value of the crop by a further £A150,000.

During recent years producers have done much to mitigate the early frost damage by watchfulness during the dangerous period of frosts. They have also done much in regard to the rain danger by careful attention to the drying racks.

It says much for the producer that recognising the hazardous conditions obtaining in the agricultural and pastoral industries there has been no lack of appreciation of the stability of the industry resulting from organised marketing and the great assistance rendered by successive Commonwealth Governments in the negotiation of favorable markets overseas.

For comparison is shown the production and exports recorded throughout the Commonwealth during the past three years—

	Production.	Export.
	Tons.	Tons.
1936	62,942	46,853
1937	71,219	54,023
1938	91,687	75,257

It is expected that for the season 1939, 56,000 tons will be shipped from Australia, of which quantity to August 10, 1939, 48,914 tons had already been shipped to the following destinations:—

	Tons.
Great Britain	31,486
Canada	13,513
New Zealand	3,541
Other Countries	374

Imports into Great Britain.

The United Kingdom still continues to afford the principal market for Australian dried fruit. The importations during the last three recorded seasons from all sources were as follows:—

	Raisins.	Currants.	Total.
1936	71,724	52,843	124,567
1937	68,950	53,024	121,974
1938	83,603	52,506	136,109

AUSTRALIAN DRIED FRUITS INDUSTRY—(Continued).

The imports of Australian dried fruits to Great Britain in the last three recorded years were as follows:—

	Raisins.			Currants.			Total.	
	Tons.	%		Tons.	%		Tons.	%
1936	21,474	(29.9)		4,574	(8.7)		26,048	(20.9)
1937	21,260	(30.8)		10,199	(19.3)		31,459	(25.8)
1938	42,898	(51.3)		13,728	(26.1)		56,626	(41.6)

Realisations in Great Britain.

	Sultanas.			Currants.			Lexias.					
Tons.	Av.	Price.		Tons.	Av.	Price.	Tons.	Av.	Price.			
	£	s.	d.		£	s.	d.		£	s.	d.	
1936	19,200	42	17	8	4,375	30	5	3	2,309	40	8	10
1937	19,775	44	5	8	10,175	29	15	9	1,524	45	18	0
*1938	40,482	39	7	4	18,952	27	3	4	2,229	45	16	4
*1939	2,420	41	0	4	5,620	30	2	9	536	42	6	10

The undermentioned table sets out the export of dried fruits produced in the Commonwealth to Canada.

	Sultanas.	Currents.	Lexias.	Total.
	Tons.	Tons.	Tons.	Tons.
1936	13,329	2,107	694	16,130
1937	13,631	2,234	1,268	17,133
1938	10,397	2,094	1,061	13,552

Shipments to New Zealand

Shipments of Australian dried fruits to New Zealand are as follows:-

	Sultanas.	Currants.	Lexias.	Total.
	Tons.	Tons.	Tons.	Tons.
1936	2,887	621	486	3,994
1937	3,495	525	513	4,533
1938	2,889	359	565	3,813

The highest export figures relating to New Zealand show that in 1937, 4,533 tons were shipped to the Dominion. While it is possible that the total export for the season 1939 may not equal the figure of 4,533 tons, it is confidently believed that a figure closely approximating the record will be realised during the current year (1939).

It might be mentioned that, despite peculiar difficulties attaching to the overseas trade of New Zealand, the Government of N.Z. have not placed any obstacles in the way of the importation of Australian dried fruits to the Dominion, a position which is greatly appreciated by the Board on behalf of the producers of Australia.

Menace of Over-Production.

In view of the fact that reports have been current that a substantial increase in acreage is contemplated, the Board has thought it advisable to record a warning against over-production.

As set out in the fourteenth annual report of the Board, the area at present under production could under favorable conditions result in the production of 100,000 tons of processed fruit. Possibly in view of the success of the scheme of drainage for certain areas the production might even exceed 100,000 tons. Production has therefore already attained proportions which may be reasonably regarded as the maximum capacity of consuming markets.

The following statistics speak for themselves:—

The consumption of dried fruits in Australia absorbs 15,000 tons per annum, leaving available from 75,000 to 85,000 tons for export markets. Thanks to the successful negotiation of the preferential admission of dried fruits to the British market and also to the Dominions of Canada and New Zealand, Australia has a reasonable expectation

of finding a market for 20,000 tons of fruit in the following proportions:—

Canada 16,000 tons
New Zealand 4,000 tons

This favorable position is entirely dependent upon the continuance of the preferential admission of Australian dried fruits to the Dominion markets concerned, which, taking care of 20,000 tons of our produce out of an anticipated export of 75,000 to 85,000 tons, might make available to the British market 55,000 to 65,000 tons.

Under the most favorable circumstances the consumption of dried fruits in Great Britain of Currants, Sultanas, and Lexias amounts to approximately 125,000 tons, made up of 75,000 tons of Raisins and 50,000 tons of Currants. It follows, therefore, that if Australia requires to market 55,000 to 65,000 tons of dried fruits in Great Britain, this is equal to approximately 44 per cent. to 52 per cent. of the total requirements of the Motherland.

Australia secures a preference of £10/10/- per ton on Raisins and £2 per ton on Currants imported into Great Britain. This might appear to justify expectation that production of Australian fruits could be safely expanded up to the capacity of the British market. Having regard, however, to adverse factors, the Board consider the maximum safe export of Currants to Great Britain should not exceed 15,000 tons per annum from the Commonwealth. Arising from this it will be noted with an export of 55,000 to 65,000 tons available for Great Britain that if provision is made in these figures for an export of 15,000 tons of currants that 45,000 to 50,000 tons of Sultanas and or Lexias must be considered as a possible export surplus of such Raisins from the Commonwealth to Great Britain.

Having regard to the fact as shown above that 75,000 tons of Sultanas and Lexias of similar types are consumed in Great Britain it would appear that if 40,000 to 50,000 tons of Australian Raisins must, apart from shipments made from South Africa to Great Britain, provide approxi-



RECIPROCAL TRADE:
Dried Fruits for Canada — News Print for Australia.

mately 53 to 67 per cent. of the British consumption and that such is available from existing acreage.

Regard must be had to the fact that, while under the most successful conditions the Board might anticipate the ultimate realisation of such tonnage, the Board look with the utmost trepidation at any increased production, having regard to the fact that such increased production must be directed to the British market.

It is pointed out that having regard to the international situation and the enormous production in countries other than Australia and South Africa that there is no market of consequence to which the Australian producer can look for any material increase in consumption.

Experience during the lifetime of the Board has shown the great difficulty which arises whenever there is a large export surplus. If Australia, by reason of increased planting, produced an additional 10,000 to 15,000 tons, which, as already shown, must be directed to the British market, it is safe to predict that the result of such increase would be disastrous not only in respect to the 10,000 to 15,000 tons, but also in regard to the 40,000 to 50,000 tons of Sultanas and Lexias which are presently being exported under existing conditions from existing acreages.

The industry has attained a certain stability of later years, and it is considered that any additional export would prove to be suicidal to the best interests of the industry which is to-day one of the most important and generally successful primary industries of the Commonwealth.

Publicity.

The Board records its appreciation of the success of the Australian Joint Trade Publicity Scheme carried on

throughout Great Britain through the Honorary Committee representing the Australian Dairy Produce Board, the Australian Apple and Pear Board, the Australian Canned Fruits Board, the Australian Egg Council and the Commonwealth Dried Fruits Control Board, together with representatives of the Department of Commerce.

An immense amount of successful work has been performed under the leadership of the Director of Australian Trade Publicity.

Grateful acknowledgment is made of the sympathetic assistance constantly afforded by the High Commissioner for Australia (the Right Honorable S. M. Bruce).

The Board has continued to contribute substantially to the work of the Joint Publicity Scheme and in addition a considerable amount of publicity work has been carried out in Canada and New Zealand largely through the offices of the Trade Commissioner for Australia in these Dominions.

Importance of the Industry.

In order to place on record the importance of the industry it should be recorded that the total acreage under vines for the production of dried fruit in Australia is about 57,389 acres, comprising—

	Acres.
New South Wales	4,631
Victoria	30,868
South Australia	19,366
Western Australia	2,524

The principal centres in which the industry is carried on include—

Mildura Areas.—Mildura, Red Cliffs, Irymple and Merbein in Victoria, in which State there are additional settlements at Nyah and Woorinen.

There's Greater Value in a

BRITISH
Fordson
TRACTOR

LOW PRICE.
LONG LIFE.
ECONOMICAL
AMPLE POWER.
A BRITISH PRODUCT.

BE LOYAL TO YOUR EMPIRE BUY A BRITISH FORDSON

As part of Australia's contribution to Britain's war strength, it is the duty of every true Australian to join in an Empire effort to conserve British foreign credits so that Great Britain may be able to purchase the materials she needs. We can play our part by buying only British products.

You can play YOUR part by buying an English Fordson.

**YOU'LL BUY A FORDSON
SOMEDAY—WHY NOT NOW ?**

DISTRIBUTORS FOR VICTORIA
RIVERINA AND TASMANIA

MALCOLM MOORE LIMITED

601 Little Collins Street, Melbourne — 'Phone M 2691 (3 lines)

AUSTRALIAN DRIED FRUITS INDUSTRY—(Continued).

South Australia.—Renmark, Berri, Barmera, Waikerie, as well as at Clare, Angaston and McLaren Vale.

N.S.W.—In the Murrumbidgee area, as well as at Cullawaa and Coomealla on the northern bank of the River Murray.

In addition there are important areas in the Swan Valley of Western Australia.

It is estimated that there are about 5,500 growers of dried vine fruits in Australia, and that temporary employment is provided for approximately 8,000 persons during the pruning, cultivating, harvesting and packing seasons. Altogether there are probably 40,000 persons directly dependent on the industry for the whole or part of their living.

It should be remembered in considering these figures that in addition the industry takes care of the total domestic requirements of Australia estimated at some 15,000 tons per annum.

Research.

The Board continues to co-operate with the Council for Scientific and Industrial Research by making contributions to the expenses of investigations into problems affecting the industry in the Commonwealth.

Opportunity is taken to acknowledge with gratitude the work being done and the advice being offered by Scientific Experts attached to the staff of the Council.

Finance.

Under the Dried Fruits Export Charges Act the following rates of levy for the season 1938 were prescribed by the Government on the recommendation of this Board:—On Sultanas, 9d. per cwt. = .0804d. per lb.; on Currants, 6d. per cwt. = .0536d. per lb.; on Lexias, 9d. per cwt. = .0804d. per lb.

For the season 1939, the following reduced rates of levy were similarly recommended by the Board and subsequently prescribed by Statutory Rules 1939 No. 17:—On Sultanas, 6d. per cwt. = .0536d. per lb.; on Currants, 4½d. per cwt. = .0402d. per lb.; on Lexias, 6d. per cwt. = .0536d. per lb.

During the year ended June 30, 1939, income was collected amounting to £40,716/19/7. Expenditure for the year was £30,196/16/9 and the excess of income over expenditure was £10,520/2/10.

The principal items of expenditure were administrative expenses in Australia, £3,759/14/-; administrative expenses in Great Britain, £7,401/8/4; contributions to the Commonwealth Government in developing the Canadian and N.Z. markets, £3,495/0/1; investigations by the Commonwealth Council for Scientific and Industrial Research, £1,500; the Trade Publicity in U.K., £12,500.

(b) The Quantity and Value of Dried Fruits Exported from Australia During the Financial Years 1935-36 to 1937-38.

	Sultanas.		Currants.		Lexias.		Total.	
	Tons.	Value. £	Tons.	Value. £	Tons.	Value. £	Tons.	Value. £
1935-36	35,491	1,399,402	9,945	375,923	1,861	69,501	47,297	1,844,826
1936-37	36,914	1,384,566	11,739	440,734	2,405	86,096	51,058	1,911,396
1937-38	44,233	1,821,516	15,266	571,143	1,960	81,339	61,459	2,473,998

Pure and Wholesome

Our Products Include

JAMS

All Varieties

TOMATO PRODUCTS

Preserved Tomatoes

Tomato Sauce

CANNED FRUITS

All Varieties

Specialties

Tomato, Asparagus,

Vegetable, Celery

SOUPS

Canned Asparagus

Canned Spaghetti

Cannot Be Excelled

Only One Quality

— THE BEST

A-J-C
Jams
Preserves
Sauces

WE ARE EXPORTERS OF JAMS, CANNED FRUITS AND TOMATO SAUCE TO ALL PARTS OF THE WORLD.

NEW COOL STORE, 120,000 Case Capacity

Cool Storage is offered both for Pre-Cooling or Long Storage. Available end of March to end of November. Lowest Rates. Facilities for Repacking.

AUSTRALASIAN JAM Co. Pty. Ltd.

1 Garden Street, South Yarra, Victoria



Canned Fruit and Jam Industries

Eighth Annual Report of Sugar Concession Committee Tells of Constructive Service to Growers and Manufacturers.

DEVELOPMENT OF DOMESTIC AND EXPORT TRADE.

EXPORTS OF JAM INCREASED FROM 2,767 TONS IN 1937-38 TO 6,192 TONS IN 1938-39.

HUGE INCREASES IN PINEAPPLE PRODUCTION — IMPORTANCE OF HORTICULTURAL RESEARCH WORK.

VALUABLE INFORMATION is contained in the 8th annual report of the Fruit Industry Sugar Concession Committee for the year ended August 31, 1939.

Personnel.

The names of the members of the Committee are as under:—Messrs. A. R. Townsend (Chairman), representing the Commonwealth Government; W. J. Short (Deputy Chairman), Queensland Sugar Board; P. A. Feil (representing growers of jam fruits); W. Young (canning fruits); A. W. Palfreyman (proprietary manufacturers); A. W. Fairley (co-operative and State manufacturers).

Statement of Receipts and Expenditure for the Year ended August 31, 1939.

Receipts.

Balances from August 31, 1938—

Fixed Deposits	£15,000 0 0
Commonwealth Bonds . . .	10,317 17 3
Bank Account	11 17 11

Queensland Sugar Board—

Statutory Contribution	216,000 0 0
----------------------------------	-------------

Special Contribution for Jam Exports	47,425 5 8
--	------------

Interest—

Fixed Deposits	187 10 0
Commonwealth Bonds	400 0 0

Sale of Annual Reports	587 10 0
----------------------------------	----------

Total	£289,344 0 10
-----------------	---------------

Expenditure.	
Domestic Sugar Rebate	£73,670 16 8
Export Sugar Rebate—	
General	£131,265 5 3
New Zealand	1,781 11 1
	133,046 16 4
Special Export Assistance—	
Berry Pulp 1937-38	4,281 18 5
Canned Apricots, Peaches and Pears 1938	22,722 15 7
Canned Apricots, Peaches and Pears 1939	21,403 13 4
Canned Pineapples 1938	8,000 0 0
Canned Pineapples 1939	2,000 0 0
Jams and Fruit Jellies	9,667 10 10
Bank Account	2,987 6 9
	68,075 18 2
Scientific Research—Pineapples	500 0 0
Administrative Expenses	745 5 8
Balances at August 31, 1939—	
Commonwealth Bonds	10,317 17 3
	13,305 4 0
Total	£289,344 0 10

During the year, the Queensland Sugar Board, on behalf of the sugar industry, again made an ex gratia contribution to the funds of the Committee in consequence of exceptional jam exports which, whilst benefiting fruit-growers and resulting in an increased disposal of Australian sugar, involved the Committee in very large payments for export sugar rebates and special export assistance. The amount contributed this year was £47,425/5/8.

Fresh Fruit Prices—1939 Season.

General.

Since its establishment in 1931, the Committee has been required under its constitution to determine prices which it considers are reasonable prices which manufacturers should pay for fresh fruits. Payments of domestic sugar rebate and special export assistance are conditional on manufacturers having purchased all their requirements of fresh fruits for the entire season at not less than the minimum prices prescribed by the Committee. In the fixation of prices, the Committee invariably closely examines all available relevant information, such as probable crop yields, stock and market conditions in Australia and overseas, etc., and, if the circumstances warrant, confers with responsible representatives of fruit-growers and processors.

The following minimum prices for fresh fruits of the 1939 season's crop were declared by the Committee to be reasonable prices. Some kinds of fruit are wholly or partly harvested during the last few weeks of the previous calendar year, but are designated in this report as being of the 1939 season:

It is important to note that the foregoing prices for 1939 and the averages for 1932 to 1939 are merely minimum prices. Each year some kinds of fruit, due to short crops in certain districts or States, are purchased by factories at higher prices; one large cannery makes substantial bonus payments to growers at the end of each season; and, in one State, a statutory growers' organisation very often secures better prices for its growers.

During the financial year 1937-38, the record quantity of 105,525 tons of fresh fruit, valued at £1,167,410, was purchased by all Australian factories, as against 67,797 tons valued at £564,000 purchased during 1930-31, i.e., just

Kind of Fruit.	1939.		1932-39.	
	Minimum Prices.	Average	For Canning.	For other Purposes.
	Per lb.	Per lb.	Per lb.	Per lb.
Black Currants . . .	3½	3½	3.05	2.73
Gooseberries . . .	1½	1½	1.86	1.11
Loganberries . . .	2½	2½	2.44	1.94
Raspberries . . .	3½	2½	3.08	2.58
Strawberries . . .	5	4½	4.03	3.53
Kentish Cherries . .	2	2	2	2
	Per ton.	Per ton.	Per ton.	Per ton.
	£ s. d.	£ s. d.	£	£
Apricots	12 0 0	10 0 0	11.25	8.875
Peaches— Clingstone—				
Clear centres . .	9 10 0	6 0 0	10.66	6.875
Other	8 10 0	6 0 0	10.03	6.875
Freestone	7 0 0	6 0 0	7.86	6.86
Pears—				
Bartlett	10 0 0	10 0 0	9.625	9.625
Keiffer	8 0 0	8 0 0	8.125	8.125
Plums	6 0 0	6 0 0	6.5	6.5
Quinces	6 0 0	6 0 0	6.5	6.5
Pineapples—				
4 inches or more in diameter, "tops off"	7 6 8	7 6 8	8.46	8.46
Less than 4 inches in diameter, "tops on"	Per case. s. d.	Per case. s. d.	Per case. s. d.	Per case. s. d.
	3 6	3 6	3 7	3 7

The Standard of Excellence



Canned Fruits & Jams

Peaches, Pears, Apricots and Sliced Peaches
Delicious Full Flavored Jams in 23 Varieties



SHEPPARTON FRUIT PRESERVING CO. LTD.

Head Office & Cannery: SHEPPARTON, Vic.
Telephones: Shepparton 123, 125.



Sales Office: 49 King Street, Melbourne.
Telephones: M 2504, M 2505.

before the present system was inaugurated. The over-all average price has thus increased from £8.32 to £10.11 per ton or by 21.51 per cent.

Berry Fruits.

The improved scale of minimum prices for berry fruits established for 1938 was maintained during the 1939 season. Manufacturers paid more than the minimum prices for some kinds of berry fruit, notably Strawberries. For the first time, minimum prices were fixed for Kentish Cherries.

Apricots, Peaches and Pears.

Of these fruits, Peaches and Pears easily predominate so far as canning is concerned. Pears are not used for jam, and little Peach jam is made. Apricots, however, are popular for both the jam and canned fruit trades, and also for drying.

Since 1931 there has been an extraordinary increase in the production of these three fruits, more particularly Peaches and Pears. This increase has been encouraged by the attractive prices for fresh fruit established by the Committee, and has been made possible by the unprecedented expansion of exports of canned Apricots, Peaches, and Pears to the United Kingdom—such trade expansion having been liberally assisted by the Committee's export bounties.

Unused carry-over stocks of Australian canned Peaches from 1938 were large, viz., 166,498 cases, and the Californian unused carry-over at December 31, 1938, of 5,716,000 cases and advices from the London Office of the Australian Canned Fruits Board indicated the likelihood of low prices for Australian canned Peaches exported from the 1939 pack. These facts, of course, weakened the price prospects for Peach growers in 1939.

It is of vital importance to fair consideration of the minimum prices fixed by the Committee for 1939, to recall that American growers received a few months earlier infinitely lower prices for their canning fruits, and that 60 per cent. of Australia's canned fruit production has to compete with American canned fruits in the U.K. market. Converted to Australian currency, the prices American growers received per long ton in 1938 were only £5/17/10 for Apricots, from £2/4/2 to £2/18/11 for Peaches, and £5/3/1 for Pears—or generally less than half the Australian growers' prices.

The prospects for the 1940 crop of Apricots, Peaches and Pears are good so far as carry-over stocks of canned fruit are concerned, but a vital consideration is the anticipated purchase by the United Kingdom Government of Australia's exportable surplus of these canned fruits. Very much depends on the prices that will be paid for them by that Government, and those prices, in turn, will depend largely on competitive quotations for American canned fruit produced again from much cheaper fresh fruit than Australian fruit.

Pineapples.

For the 1939 Summer and Winter crops of Pineapples, the Committee fixed minimum prices of £7/6/8 per ton "tops off" at grower's railway station, and 3/6 per case



Interior view of a section of a Fruit Cannery.

"tops on," plus freight and cartage, for Pineapples purchased by manufacturers at fresh fruit markets. The former price, which covers the great bulk of the fruit, represented a reduction of £2 per ton off the price for the 1938 Summer crop, but was the same as the Winter crop price for 1938.

The Committee of Direction of Fruit Marketing, Brisbane, was given authority, as in 1938, to create a general reserve to meet losses on exports of canned Pineapples in excess of the export bounty of £4,000 granted by my Committee. This reserve was established by withholding a maximum amount of £1/1/8 per ton from growers, any unused portion of the reserve to be returned to growers at the end of the season. Authority was also given for a levy of 10/- per ton for the purchase by growers of their half-interest in Queensland Canneries Pty. Ltd. The net cash price initially paid to growers for 1939 Summer crop Pineapples was therefore £5/15/- per ton.

During 1938, export reserves of £1 and £1/10/- per ton were authorised by the Committee for the Summer and Winter crops respectively. Of these amounts, 5/9 and 15/9 per ton respectively were refunded to growers at the end of the season, not being required to meet the actual losses on 1938 exports of canned Pineapples.

Growers were also debited during 1939 with their fair proportion of canning losses and inspection costs due to deliveries of internally-blemished Pineapples. For the 1938 season, a general deduction of 6/8 per ton was authorised for this purpose.

Statistics of Queensland's Pineapple production reveal the tremendous expansion of factory consumption (purchases) since 1932. In that year a record intake of 298,107 cases occurred, but by 1938 the intake had reached no less than 689,350 cases. Moreover, the factory intake from the Summer crop for 1939 was 438,989 cases, which is 81,474 cases above the previous Summer crop record.

If you are Interested in Poultry

Read the . . .

POULTRY BREEDERS' GUIDE

100 Pages for 1/-

BOX 1944, G.P.O., MELBOURNE, VICTORIA.

CANNED FRUIT AND JAM INDUSTRIES—(Continued).

The total production of Pineapples has increased from 758,433 cases (then a record) in 1932 to 1,317,176 cases in 1938. The vast expansion in 1938 was very largely due to improved cultural methods organised by the Queensland Department of Agriculture and financially assisted by the Committee.

Non-Canning Fruits.

The term "non-canning fruits" applies to fruits used by manufacturers for jam, pulp, crystallised fruit, cordials, chutneys, etc. For the 1939 season, the prices of berry fruits and Apricots for non-canning purposes were the same as in 1938. A reduction of £1 per ton, however, occurred in 1939 in respect of all varieties of Peaches, and also Plums and Quinces.

The slight reductions mentioned were considered necessary on account of the heavy carry-over stocks of jam and pulp still held by manufacturers at the beginning of the 1939 season. Since then, extremely large exports of all kinds of jam have occurred, and the stock position is much sounder than it has been for some years. Consequently the outlook for growers of non-canning fruits during the 1940 season is bright.

Canned Apricots, Peaches and Pears.

During the year, the original advance payments of special export assistance on all the above fruits of 2d. per dozen for 30-oz. cans and 1d. per dozen for 16-oz. cans in respect of exports from the 1938 pack were increased to final amounts of 3½d. and 1½d. respectively for Peaches and Pears, but no addition was granted on Apricots.

Canners faced the 1939 processing season with substantial unsold stocks from the 1938 pack—43,144 cases of canned

Apricots, 166,498 cases of canned Peaches, and 108,638 cases of canned Pears. At the same time the outlook in overseas markets, particularly for canned Peaches and Pears, was not bright.

Despite seasonal vicissitudes the Peach pack reached the record of 1,852,796 cases.

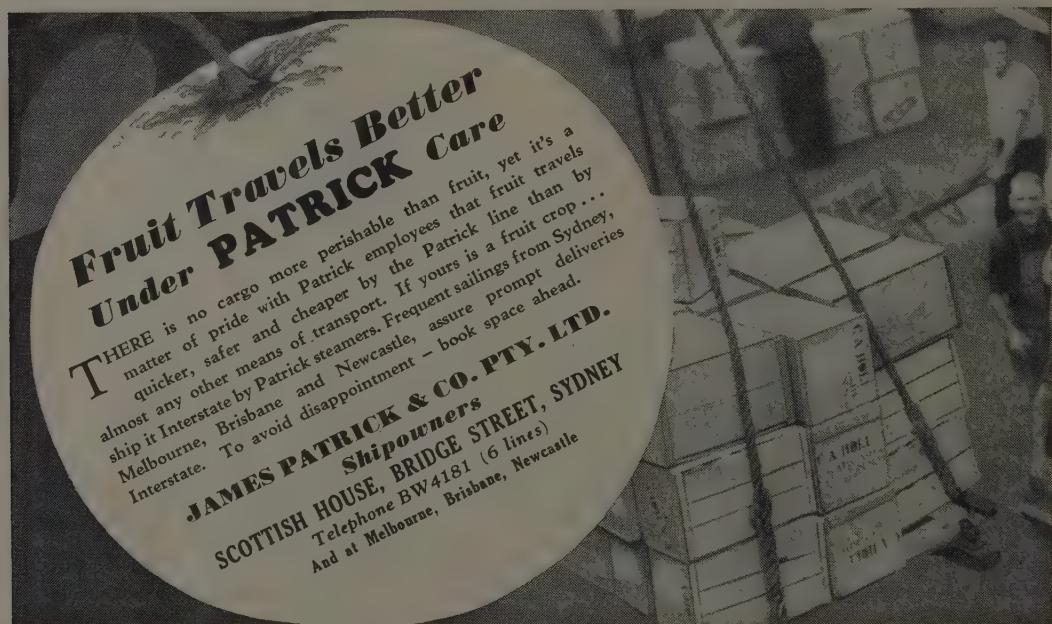
The aggregate 1939 pack in the three kinds of fruit was 2,708,195 cases, which was 322,000 cases less than the record production of 1938, but 380,000 cases in excess of the next highest Australian output. Taking into account unsold stocks amounting to 318,280 cases carried over from 1938, 3,026,475 cases were thus available for distribution during 1939.

A shortage of fresh fruit on the Australian domestic market created a keen demand for all canned fruits during the early months of 1939, and this was instrumental in moving an appreciable portion of the carry-over stocks into consumption much earlier than under normal conditions.

A survey made later in the year revealed that approximately 1,800,000 cases would be available for disposal overseas, or slightly more than the previous largest volume of exports.

For many years the United Kingdom has purchased 90 per cent. of Australia's exports.

During the first month of selling operations for the 1939 season, sales in the British market slightly exceeded 1,000,000 cases, at competitive prices, this being the result of the orderly marketing, which has characterised the disposal of Australian canned fruits overseas in recent years, and which has been instrumental in building up goodwill with an ever-widening clientele throughout the United Kingdom.



The American stock position has shown a decided improvement this year, attractive prices to the consumer and intensive sales campaigns having combined to move an unusual volume of stocks into consumption in that country.

Shipments to N.Z. show some contraction in comparison with 1938, due to import restrictions imposed by the N.Z. Government. Nevertheless, Australian exports to this market will approximate 80,000 cases—the limit permissible under existing conditions. Trade with Canada and other export markets has been maintained at a satisfactory level.

It has been officially announced that the British Government will purchase Australia's surplus canned fruits next season, on prices and conditions to be arranged.

Canned Pineapples.

The large stocks of Australian canned Pineapples, which existed in the late months of 1938, were virtually cleared by the end of that year through selling at lower prices, and also through some distress selling in U.K. These clearances enabled the 1939 Summer pack gave a record total of 249,131 cases, an increase of 56,605 cases on the corresponding pack of 1938. Winter pack normal.

The principal export markets available for Australian canned Pineapples are the U.K. and Canada. Shipments as at 31st August last ex the 1939 pack were 26,343 cases to the U.K. and 19,054 cases to Canada. Sales actually effected, however, are appreciably in advance of these figures, and there are indications that the aggregate exports for 1939 will be the heaviest for several years.

The consumption figures for canned Pineapples show a marked increase for 1938—a record year. It would appear that the industry will need to aim at still higher domestic consumption if growers' increasing crops of fresh Pineapples are to find a market—for the prospects of substantial expansion of the present volume of exports of canned Pineapples do not seem very bright.

Berry Fruit Products.

An amount of £4,000 was provided for special assistance on Raspberry pulp of the 1939 pack exported not later than December 31, 1939. Pulp manufacturers were guaranteed against loss to the extent of £10 per ton on the basis of net f.o.b. cost of £39/18/- per ton.

Owing to the small carry-over stocks of berry pulps from 1938, manufacturers bought fresh berries freely during 1939. Berry pulps and jams have commanded excellent prices both in Australia and abroad, and it is understood that very satisfactory quantities have been sold.

Market values in the U.K. have been so good—due mainly to reduced production in 1938 of berry fruits in England and Scotland—that the Tasmanian surplus of Raspberry pulp has been sold at prices which will not involve the Committee in any payments under the above-mentioned guarantee. Black Currant pulp sold at excellent prices.

The 1938 exports of Raspberry pulp, 1,347 tons, and the total exports of all pulps, each constituted a record for this period.

Jams and Fruit Jellies.

At the end of 1938, the Committee decided to reduce from £5 to £2/10/- per ton the special export rebate which applies to the sugar contents of jams and fruit jellies except:—(a) goods shipped to N.Z.; and (b) goods shipped to the U.K. which are made from fruits of kinds which are grown in commercial quantities in that country.

The reduced rate applies to exports to December 31, 1939.

The reduction of this rebate by 50 per cent. was the same as reductions made this year in all other forms of special export assistance, and was necessitated by a similar reduction of the Committee's available funds for assisting the export of all manufactured fruit products.

This action was also taken because exports of jams and fruit jellies had substantially increased since the Committee initiated the special rebate (from 748 tons in 1931-32 to 2,767 tons in 1937-38), and exports of certain jams and fruit jellies to the U.K., from which the special rebate had been withdrawn previously, had nevertheless increased.

Despite the reduced assistance since December, 1938, exports of jams and fruit jellies have increased to an extraordinary extent. The total exports for 1938-39 were 6,192 tons, i.e., more than double the trade of the previous year, and over eight times as much as in 1931-32, the first year of the Committee's operations.

Exports to the United Kingdom have advanced in one year from 1,641 tons to 5,184 tons. In the last-named quantity there were 1,718 tons of jams on which no special rebate was paid—a quantity which exceeded all exports to the U.K. in the previous year (1937-38).

Research and Efficiency.

The Committee again contributed £500 to the Queensland Department of Agriculture towards a special campaign to increase the efficiency of Pineapple production. This campaign achieved marked success, and has already enabled many growers to increase their yields per acre at lower costs per ton of fruit.

If Pineapple growing efficiency had not been increased substantially in recent years, the industry as a whole and nearly every grower in it would now be in a serious position. Even the present measure of efficiency needs considerable development, if the industry is successfully to meet future marketing problems.

The same remarks apply with at least equal force to other fruit growing industries, notably Apricots, Peaches and Pears, in regard to which State Governments and growers have so far devoted far too little attention to what can fairly be described as the most vital problem.

The long-range future of these industries, having in mind the very great expansion of production necessary to supply the preferential market still available in the U.K., depends almost entirely on increased efficiency by various attainable methods in yields of saleable fruit per acre.

Intensive production rather than extensive production is the only worth-while policy, especially for any industry, primary or secondary, which has to export much of its output in competition with the goods of other countries.

Appreciation.

The Committee records its thanks to the Department of Trade and Customs, the Department of Commerce, and the Australian Canned Fruits Board, and all members of its staff in Canberra and Melbourne, for willing co-operation and assistance rendered throughout the year.

On behalf of the Fruit Industry Sugar Concession Committee,

A. R. TOWNSEND, Chairman.
Canberra, A.C.T., 30/10/39.

The production of Pineapples increased from 774,329 cases in 1937 to 11,317,176 cases in 1938. These are reckoned on the basis of 1½ bushel cases "tops on," much increased cultural efficiency has resulted from research work.

Australian Canned Fruit Industry

APRICOTS, PEACHES, PEARS AND PINEAPPLES.

Satisfactory Development of a Large Industry.

Warning Against Undue Plantings by Canned Fruits Board.

THE thirteenth annual report of the Australian Canned Fruits Board, dated September, 1939, contains details of the work accomplished under the headings of: (a) administration, (b) canned Apricots, Peaches, Pears, (c) canned Pineapples, and (d) general.

The personnel of the Board is as follow:—Sir Chas. Merrett, C.B.E., V.D. (Chairman), Messrs. G. J. Evatt, A. W. Fairley, T. L. Stafford and B. Flewell Smith. The representative at London is the Rt. Hon. L. S. Amery, M.P. The Secretaries are Mr. W. J. Adams (Melbourne), and Mr. W. B. Cooper (London).

Finance.

At the commencement of the financial year the credit balance brought forward was £14,620/13/- . Revenue is shown as £10,383/8/-, being a decrease of £5,096/12/1 in comparison with that of 1937/38. This substantial decline is attributable to the reduced levy on exports.

Expenditure totalled £11,331/13/7, being £2,124/2/5 less than 1937/8. The disbursements made, however, represent an excess of expenditure over income of £948/5/7. At June 30, 1939, the Board, after making provision for sundry creditors, had a credit balance of £13,672/7/5.

The Apricot pack in 1939 was 282,422 cases, representing a 26 per cent. decrease in comparison with the 1938 output of 380,082 cases.

In Clingstone Peaches there was a record pack of 1,852,796 cases, being an advance of 62,054 cases on the 1938 pack.

The quantity of canned Pears processed was 572,977 cases, showing a 67 per cent. pack as compared with the previous year.

The aggregate of the packs of Apricots, Peaches and Pears was 2,708,195 cases, being exceeded only in 1938. This aggregate pack represents approximately 55,000 tons of fresh fruit, which figure would be augmented by an appreciable tonnage of Apricots and Peaches used for jam and pulp.

The Board again stresses the danger of extending orchard plantings beyond a point where the yields exceed the capacity of canners to handle them on a sound economic basis.

Growers' associations are alive to the danger. Nevertheless, an official survey appears to be desirable to determine whether planned production, supported, if necessary with appropriate official guidance is warranted to ensure stable conditions throughout all sections of the fruit canning industry.

Domestic Consumption.

The consumption of canned Apricots, Peaches and Pears in Australia during 1938 exceeded that of any previous year, i.e., a total of 1,087,186 cases of canned Apricots, Peaches and Pears—an increase of 13 per cent. on 1937 (963,150 cases).

Exports.

Exports of canned Apricots, Peaches and Pears during 1938 were a record—1,693,376 cases being an advance of 23,588 cases on 1937 shipments.

Opening Prices.

The opening prices were as follow:—

	Apricots.	Peaches.	Pears.
30 oz.	16 oz.	30 oz.	30 oz.
Choice ..	7/6	4/10½	6/7½
Standard ..	7/-	4/7½	6/1½
Seconds ..	6/6	—	4/1

Pineapples.—No. 1's, choice sliced, 4/3; 2's, do., 5/-; 2½'s, do., 6/6; 10's, crushed, 24/- per doz. cans, c.i.f. main U.K. ports.
--

Canned Apricots, Peaches, Pears and Pineapples. Production—

Figures in cases each containing 2 doz. 30 oz. tins, or its equivalent.

	1926.	1938.	1939.
Apricots	135,675	380,082	282,422
Peaches	758,999	1,790,742	1,852,796
Pears	229,000	860,104	572,977
Pineapples	132,425	358,594	382,290

1,256,099 3,389,522 3,090,485

Export—

Apricots, Peaches and

Pears	295,663	1,693,376	1,862,454
Pineapples	(a)	74,785	93,015

In addition there were exported 9,518 cases of fruit-salad in 1939.

British Preference.

The report states that the maintenance of a satisfactory margin of tariff preference over foreign competitors for the British market is vitally important to Australian fruitgrowers and processors and to complementary commercial and labor interests.

(a) Figures for 1926 not available.



Advertising display of Canned Fruit in Great Britain.

Details are given of the effects of the duties under the Anglo-U.S.A. Trade Agreement, and it is stated that there had been sustained effort to secure on canned Apricots, Pears and Peaches, a preference of 7/6 per cwt. instead of the ad valorem rate of 15 per cent., but it was noted the 15 per cent. ad val. rate was retained.

Particulars are given in the report of the activities of the Empire Canned Council, on which Australia is represented.

Tinplate.

While profoundly interested in the subject of the proposed establishment of a tinplate industry in Australia, the Board felt it could not tender advice at the enquiry on the subject. Correspondence between the Board and the Commonwealth Jam, Preserving and Condiment Manufacturers' Association is published disclosing certain potentially difficult issues which may arise from the establishment of a highly protected tinplate industry in Australia.

PROCESSED APPLES FROM CANADA.

Large Exports to Great Britain Expected.

The British Food Ministry is expected to order evaporated and canned Apples for shipment every month from November until May, from the port of Halifax. The Apples are to be processed in Nova Scotia, chiefly the Annapolis Valley. Indications are that the 85 per cent. of the valley Apple crop, which would ordinarily go to England in the raw fruit, will largely be shipped there as evaporated and canned Apples, because of the exigencies of war. The Nova Scotia Department of Agriculture is co-operating with the Dominion Department of Agriculture in the campaign for Apple manufacturing as a means of overcoming the Apple glut in Nova Scotia and compensating the growers for the approximately 3,000,000 dollars they paid during the growing season on fertilizers, insecticides, spraying equipment, labor, etc. The outlook is that the volume of apples manufactured in Nova Scotia from the 1939 yield will establish a new record by a wide margin.

The Fruit Industry Sugar Concession Committee contributed £500 to the Queensland Department of Agriculture to conduct research work for increasing the efficiency of Pineapple production; marked success has been achieved.

1940 SEASON'S PRICES FOR APRICOTS, BERRIES, PLUMS, QUINCES, AND KENTISH CHERRIES.

Prices for Peaches, Pears and Pineapples Not Decided Yet.

The Fruit Industry Sugar Concession Committee has announced the following minimum prices for fresh fruits to be paid by manufacturers to growers in respect of 1940 season, which includes several kinds of fruit harvested during the last few weeks of 1939, figures in parentheses showing opening rates for the 1939 season:

	Jam Manufacturers. Canning. Per lb.	Per lb.
Black Currants	3½d. (3½d.)	3½d. (3½d.)
Gooseberries	2d. (1½d.)	1½d. (1½d.)
Loganberries	3d. (2½d.)	2½d. (2½d.)
Raspberries	3½d. (3½d.)	3d. (2½d.)
Strawberries	5½d. (5d.)	5d. (4½d.)
Kentish Cherries	2½d. (2d.)	2½d. (2d.)
Red Currants	2½d. (—)	2½d. (—)
	Per Ton.	Per Ton.
Oullins Apricots	£9 (—)	£9 (—)
Other Apricots	£13 (£12)	£11 (£10)
Plums	£8 (—)	£8 (£6)
Quinces	£8 (—)	£7 (£6)

The Committee stated that it had decided to defer consideration of the minimum factory prices to be paid for Peaches, Pears, and Pineapples until information was received from the Commonwealth Government as to the prices that would be paid for those fruits in canned form by the British Government or by any control board established in the United Kingdom for the purchase of canned fruits from Australia for the duration of the war.

It was hoped that prices for sales of canned fruits to the United Kingdom would be satisfactorily arranged in the near future.

With regard to exports of berry fruit pulps, the committee does not contemplate affording financial assistance thereon in respect of shipments from the 1940 pack.

The importance of research to secure increased efficiency in fruit production is strongly urged by the Fruit Industry Sugar Concession Committee.

Food Spoilage Held to an Absolute Minimum

with

★ DAREX ★ DEWALCO ★ GOLD SEAL

Modern and Reliable

SEALING COMPOUNDS

for Tin and Glass Containers

Manufactured to Established World Standards by

DEWEY AND ALMY PTY. LTD. - MELBOURNE

Fruit and Jam Manufacturers in Australia

New South Wales:

J. Ambrose Ltd., Princes Highway, Kogarah.
 L. Cowing, 554 Parramatta-road, Petersham.
 Fowlers Vacola Manufacturing Co. Ltd., Rosebery.
 Holbrooks (A/asia) Pty. Ltd., Danks-street, Waterloo.
 Hygienic Jam Co. Pty. Ltd., 23 Ivy-street, Darlington.
 W. H. Johnson & Co. Ltd., Bruce-street, Waterloo.
 H. Jones & Co. (Sydney) Pty. Ltd., Darlington, Sydney.
 Lackersteen & Co. Pty. Ltd., 2 Parramatta-road, Camperdown.
 F. C. McMartin & Co., Dean-street, Enfield.
 MeadowSweet Jam Co., 11 May-street, Eastwood.
 P. Methven & Sons, Mt. Druitt.
 Leeton Co-operative Cannery Ltd., Leeton.
 Nestle & Anglo-Swiss Condensed Milk Co. (A/sia) Ltd., Walton-crescent, Abbotsford.
 Pick-Me-Up Condiment Co. Ltd., Alice-street, Newtown.
 Rosella Preserving and Manfg. Co. Ltd., Morley-avenue, Rosebery.
 Sherwood's Jams & Preserves, 6a Isabella-street, Balmain.
 Tillock & Co. Ltd., Kent and Liverpool streets, Sydney.

Victoria:

Ardmona Fruit Products Co-op. Co. Ltd., Mooroopna.
 Australasian Jam Co. Pty. Ltd., 1 Garden-street, South Yarra.
 Bendigo Preserving Co. Ltd., Garsed-street, Bendigo.
 W. A. Blake Pty. Ltd., 252-4 City-road, South Melbourne.
 Brookes Lemos Ltd., 69-79 Whiteman-street, South Melbourne.
 D. Camm & Sons Pty. Ltd., Monbulk.
 R. G. Champ (Mrs.), "Banool," Wandin Yallock.



Picking Peaches in a Goulburn Valley Orchard.

Clegg & Kemp Pty. Ltd., 115 Stanley-street, West Melbourne.

S. Davis & Son Pty. Ltd., 87' Rupert-street, Collingwood.
 Fowler's Vacola Pty. Ltd., 253-259 Burwood-road, Hawthorn.

Fruit Growers' Preserving Co. Pty. Ltd., 189a Victoria-street, Ballarat.

W. H. Johnson Jams Pty. Ltd., 42 Meaden-street, South Melbourne.

Jones Miller & Co., Williamson-street, Bendigo.

Kyabram Co-op. Fruit Preserving Co., Kyabram.

H. M. Leggo & Co. Ltd., Victoria-crescent, Abbotsford.

Francis Longmore & Co. Ltd., 617 Spencer-street, Melbourne.

R. Lohn & Co. Pty. Ltd., 36 Albermarle-street, Kensington.

Melbourne Jam Co. Pty. Ltd., 242 Rae-street, North Fitzroy.

Mildura Co-operative Fruit Co. Ltd., Box 104, Mildura.

Passila Passion Fruit Products Ltd., 40 Queen-street, Melbourne.

Rosella Preserving & Manfg. Co. Ltd., Cremorne Gardens, Richmond.

Shepparton Fruit Preserving Co. Ltd., Shepparton.

Henry Williams & Sons Pty. Ltd., Heidelberg-road, Alphington.

Queensland:

F. G. Butt & Sons, Murphy-road, Zillmere.
 P. Elms & Co. Pty. Ltd., Nott-street, South Brisbane.
 John Fischle & Sons Pty. Ltd., Bald Hills, Queensland.
 Mrs. K. M. Furlong, 157 Esplanade, Brisbane.
 J. Hargreaves & Sons Pty. Ltd., Manly, Queensland.
 Queensland Canneries Pty. Ltd., Brisbane.
 Summerland Preserving Co., May-street, Milton.
 Sumner's Preserving Co., Flower-street, Nundah.
 Tassell Products, Montague-road, Hill End, South Brisbane.

Victoria Cross Manfg. Co. Pty. Ltd., Woollongabba.

South Australia:

Blackwood Cold Stores Ltd., Blackwood.
 J. Brooker & Sons, Port-road, Croydon.
 Glen Ellen Cannery, Hahndorf.
 F. Humphris & Sons Ltd., Carrington-street, Adelaide.
 Fred A. James Ltd., Victoria-square, Adelaide.
 H. Jones & Co. (Adelaide) Pty. Ltd., Keswick.
 Geo. McEwin & Son Ltd., 27 Grenfell-street, Adelaide.
 Robson, Jarvis & Co., Hectorville, Montacute-road.
 Rosella Preserving & Manfg. Co. Ltd., Kent Town.
 South Australian Fruitgrowers' Co-operative Society Ltd.
 Payneham-road, St. Peters.

Western Australia:

Crystal Jam Co. Ltd., Railway-parade, East Cannington.
 George A. McKim (Orchard Peel Co.), Edward-street, Gosnells.

Plaistowe & Co. Ltd., 155 Havelock-street, Leederville.

H. Rayner & Sons, 90 Railway-parade, West Perth.
 Swan Brand Products, 567 Newcastle-street, Perth.

Tasmania:

H. Jones & Co. Pty. Ltd., Old Wharf, Hobart.

Tasmanian Rosella Preserving Co. Ltd., Hobart.

J. G. Turner Pty. Ltd., Morrison-street, Hobart.

Port Huon Fruitgrowers' Co-op. Association Ltd., Davey-street, Hobart.

Some Notes on the Cool Storage of Apples

(By G. B. Tindale, B.A.Sc. (Cool Storage Research Officer, Victorian Dept. of Agriculture), and F. E. Huelin, B.Sc., Ph.D. (Council for Scientific and Industrial Research).

FRUIT COOL STORAGE in Australia is concerned mainly with the storage of Apples. Apples are stored throughout the year, the last Apples being removed from storage as the new season's Apples make their appearance. Although, generally speaking, the cool storage of Apples is regarded as successful commercially, nevertheless, through various causes, losses are frequently sustained. These losses have been the subject of investigation by the Department of Agriculture and the Council for Scientific and Industrial Research working at the Government Cool Stores, Melbourne.

In Victoria, the Jonathan is grown in far greater quantity, and hence is cool stored in greater volume than any other variety.

Actually, however, the Jonathan is a poor storage variety. Not only is it far more subject to storage disorders than most other varieties, but it also has a much shorter storage life, and hence loses its flavor at an early date.

Indeed, few Jonathans are possessed of normal flavor after the end of September, and it would seem to be a mistake to market flavorless Jonathans during the latter months of the year when better keeping varieties, still possessed of fairly good flavor, are available.

In cool storage, the Jonathan is subject to several disorders, the most important of which are Soft Scald, Breakdown, and Jonathan Spot. These disorders are not due to conditions of storage alone, but occur as the result of certain storage and pre-storage conditions operating together.

Soft Scald

is a low temperature disorder which appears only in certain susceptible Apples. In storage, Soft Scald may be very bad at 32 deg. F., only slight at 34 deg., and does not occur at, or above, 36 deg. Jonathans, however, deteriorate in quality far more rapidly at 36 deg. than at

32 deg. and continuous storage at 36 deg. is, therefore, not recommended.

It has been found that susceptible Apples scald relatively early in storage, and when once past this period, the Apples can be stored at 32 deg. without further risk of scald development. As the result of several season's trials, it is recommended that, for the control of Soft Scald in Jonathans, they should be stored at 36 deg. until the end of April, then at 34 deg. during May, and at 32 deg. from June onwards. Of the pre-storage factors responsible for Soft Scald, the most important are concerned with maturity at picking time, the temperature of the Apples, and period of delay before storage.

Neither immature (ground color green) nor over-mature Jonathans (ground color yellow) are susceptible to scald. However, it is not advisable to store either immature or over-mature Jonathans, for the former lack quality, while the latter are liable to become mealy, or breakdown early in storage, and also lose their flavor quickly.

It is the Jonathan, picked in its prime (ground color green-yellow), which stores best, giving reasonably long storage life combined with good quality. Unfortunately, it is this Apple, picked at this stage of maturity, which is so liable to scald, and hence the necessity of using suitable temperatures to prevent its occurrence.

It has also been found that, if Apples are exposed to high temperatures before storage, they become more liable to scald, and it is, therefore, a bad practice to stack Apples in iron sheds prior to storage.

"Breakdown" in Cold Stores.

Breakdown, like Soft Scald, is also a low temperature disorder, but it appears that rather higher temperatures are required to control breakdown compared with the temperatures suitable for the control of scald. On the other



VIEW OF A SECTION OF THE COOL STORE OF THE AUSTRALASIAN JAM COMPANY.

Limitation of Export Markets and Intermittent Shipments necessitate further development in Local and Interstate Markets . . .

Ample Cool Storage Space will be a Big Factor in Spreading the Marketing Period

INCREASED consumption of Apples and Pears throughout Australia during the coming season will be essential to market the big crops that will be harvested. It is confidently anticipated that the consumer will rise to the occasion and assist an industry that has lost its overseas markets because of conditions beyond its control. Individual fruitgrowers and their organisations can naturally assist in this progressive step by marketing fruit of the highest quality and making provision for spreading sales over a longer period. Extra cool storage space is an essential factor for the success of this campaign—glut periods must be avoided.

Cool Stores Attached to the Orchard are a Valuable Asset Because . . .

- ◆ The orchard with a cool store attached is properly equipped to meet marketing conditions.
- ◆ The capital value of an orchard with a cool store is greatly in excess of those without.
- ◆ Time and money is saved in carting fruit from orchard to district store and can be used profitably elsewhere.
- ◆ Facilities can be provided for an up-to-date packing and grading room right on the orchard.

IT WILL PAY YOU TO CONSIDER THESE ASPECTS IN RELATION TO THE FUTURE OF YOUR ORCHARD AND CONSULT . . .

**R. WERNER
& CO.
PTY. LTD.**

. . . WHO WILL BE PLEASED
TO SUBMIT DESIGNS AND
ESTIMATES OF COSTS AND
METHODS OF FINANCING.

An automatic job will give the best results. This method of control has proved successful and entails no service whatever for the full storage period.

The New Direct Expansion Method of Refrigeration

far as the storage of Apples and Pears is concerned, is a vast improvement on the old air circulation system. Many stores have changed over from the old battery system to the direct expansion method, with very satisfactory results, and considerable saving in cost of operation and maintenance. We shall be glad to submit an estimate covering the cost of conversion to direct expansion, or for new stores on request.

Practical research has developed a new direct expansion method of refrigeration, used in combination with a system of defrosting, etc. (patent applied for), and it is generally agreed that this system, as

IF YOU HAVE A COOL STORAGE PROBLEM OF ANY KIND WRITE TO US AND WE WILL ARRANGE FOR A REPRESENTATIVE TO CALL AND SEE YOU.

R. WERNER & CO. PTY. LTD.
Refrigerating Engineers

54-86 BURNLEY STREET

Phones: J 1161 (6 lines).

CITY SHOWROOM: 610 LITTLE COLLINS STREET, MELBOURNE.

Phone: M 1145.

N.S.W.: R. J. LINDSAY,
99 Kippax St., Sydney.

AGENTS:-
S.A.: W. J. WHITE,
56 Franklin St., Adelaide.

W.A.: ATKINS (W.A.) LTD.,
894 Hay Street, Perth.

hand, Jonathan Spot develops much more rapidly at the higher temperatures.

From October onwards, Jonathans in cool storage are very subject to infection by mould. This is due to the fact that, as the Apple reaches the end of its storage life, it loses its natural resistance to mould attack.

Most of the other varieties commercially grown in Victoria, have been stored experimentally under various temperature conditions and almost without exception, best results have been obtained by storing continuously at 32 deg. At this temperature, the storage disorders, to which the Jonathan is subject, did not appear, while quality (flavor, crispness, juice, etc.), was retained for longer than at temperatures even slightly higher, i.e., 34 deg.

One exception was the King Cole variety, a variety of the Jonathan type (one parent being the Jonathan), but a much better keeping variety than the Jonathan. This variety is subject to Soft Scald, and hence is best stored under the temperature conditions recommended for the Jonathan.

Superficial Scald.

THE MAJOR STORAGE trouble with varieties, other than the Jonathan, is Superficial Scald, a brown discoloration of the skin. The Granny Smith, Stewarts, Dunn's, Cleopatra and Delicious varieties are very subject to this disorder. It has been found that, for all varieties, the use of oil wraps has given almost complete control of this disorder. Some growers adopt the practice of delayed storage as a means of control of this disorder. This has been investigated experimentally, and it has been found that only when the Apples happen to be in a particular stage of maturity does delayed storage control Superficial Scald.

The practice of delayed storage, however, is one that should be avoided because it causes a reduction in cool storage life. Where the delay extends over a few weeks, the storage life is most seriously reduced, the Apples losing their flavor and becoming mealy at an early date.

Thus it is recommended that varieties subject to Superficial Scald, should be wrapped in oil wraps and placed in cool storage promptly after picking.

Australian and New Zealand Cool Stores with Case Capacities

VICTORIA.

Capacity in Cases.

Govt. Cool Stores, Victoria Dock	190,000
Shepparton Cannery Cool Stores	200,000
Orchardists' Co-op., Doncaster East	134,000
Australasian Jam Co.	120,000
Metro. Ice and Fresh Food Co.	100,000
Harcourt	80,000
Kyabram Preserving Co.	63,000
Shepparton Fruitgrowers	60,000
Blackburn	55,700
Ardmona	53,000
Ringwood	50,223
Northcote Ice and Cold Storage	50,000
West Doncaster	40,000
W. Woodmason Ice Supply (3 stores)	40,000
Burwood East	42,000
Wantirna	39,200
Tyabb	38,270
Dilworth and Son	35,000
Hastings Cool Stores	34,000
Hurstbridge	32,000
East Doncaster	31,500
Mount Waverley	30,420
Sennitt & Son Pty. Ltd.	30,000
Box Hill Ice and Cold Storage Pty. Ltd.	30,000
Red Hill	29,000
Brighton Ice and Cold Storage	25,000
Valley View Orchards, Pakenham Upper	24,000
Somerville Cool Stores	22,000
Croydon Cool Stores	21,056
Angliss & Co. Pty. Ltd., W.	20,000
Deepdene Ice and Cold Storage	20,000
Floyds Ice and Cold Storage	20,000
French, Deepdene	20,000
Templestowe Cool Stores	20,000
Pyke, F. C.	20,000
Diamond Creek	17,800
J. Brunning & Sons, Somerville	17,500
Lawford, E., Doncaster	17,000
Graceburn Valley, Healesville	17,000
Maryborough	16,000
Brunswick Ice and Cold Storage	15,000
Portland	15,000
Narre Warren	15,000

Two Bays Nurseries and Orchard Pty. Ltd.	15,000
Brunswick	15,000
Ireland, A. E., Doncaster	14,000
Petty, F., Mitcham	14,000
Tully, J. J., Doncaster	13,000
Lawford, V.	12,500
Apted, Geo., Arthur's Creek	11,000
Johns, R., Queenstown	11,000
Richmond Ice Works	11,000
Dobson Bros., Ferntree Gully	10,000
Bendigo Fruitgrowers' Co-op. Association	10,000
Geelong	10,000
Fitzroy Ice Works	10,000
Heatherlea, Croydon	10,000
Elinora Orchards	10,000
Petty, Herb.	10,000
Hyland, D., & Sons	10,000
Ireland, W., Mitcham	10,000
Australian Ice Works, Ballarat	8,000
Jenkins, Scoresby	7,000
Scott, D., Greensborough	7,000
Tynong (W. C. Thomas & Co.)	7,000
F. W. Cameron	7,000
Carpenter, J. D., Hastings	6,500
Burke Bros., Diamond Creek	6,500
Bunyip	6,118
Lechte Bros., Mt. Waverley	6,000
Robinson, T., Scoresby	6,000
Heinz Bros., Ballarat	5,000
Preston and District Ice and Refrig.	5,000
Finger, F., Balwyn	5,000
Haysey, R. E., Narre Warren N.	5,000
Corbett, D. J., Doncaster	5,000
Muller, O., Queenstown	5,000
Jenkins, W. R., Doncaster	5,000
Bailey, J. W., Narre Warren	3,800
Shearer, O. J., Nutfield	3,000
Mordialloc Ice Works	3,000
Moore, J. E., Panton Hill	2,500
Clark, T. J., Diamond Creek	2,500
Cobram (P. Rossiter, Citrus Fruit)	2,500
Cool Stores, J. Hanley	2,000
Smith, W. J., Panton Hill	2,000
Kent, Narre Warren	2,000
Total	2,296,587

NEW SOUTH WALES.

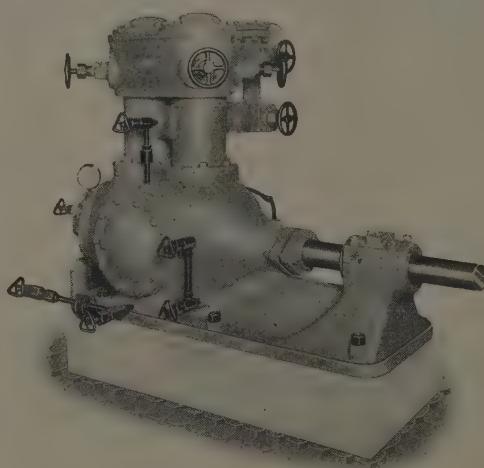
Albury District Rural Co-operative Society, Fallon-street, North Albury	5,000
*Barrett, W. E., Orange	125,000
Batlow Packing House, Batlow	64,000
*Country Freezing Co. (1924) Pty. Ltd., Blayney	15,000
*Dark's Ice and Cold Storage Works, Newcastle	80,000
Della Valle, F. J., Batlow	5,800-6,000
Dimdore, Alex., Batlow (late Arnot)	10,000
Freame, H., Kentucky	1,800
Griffith Producers' Co-op. Co. Ltd., Griffith	15,000
Harris Bros., Little Hartley	2,250
*Hyland & Sons Pty. Ltd., David, Sydney	12,000
Jackes & Co., R. A., Armidale	9,000
Kentucky Rural Co-op. Soc. Ltd., Kentucky	16,000
Leeton Co-operative Cannery, Leeton	50,000
Market Cool Stores, Sydney (L. A. Bownas)	23,000
*Metropolitan Ice and Cold Storage Works, Sydney	4,000
Mort, S. R., Leeton	500
Municipal Cold Storage Works, Sydney	70,000
*N.S.W. Fresh Food and Ice Co. Ltd., Sydney	30,000
Oldfield and Sons, W. E., Queanbeyan	1,200
Orange Fruitgrowers' Co-op. Cool Stores, Orange	61,000
Pearson, E., Chipping Norton, Liverpool	500
Riverina Cool Stores and Trading Co., Wagga Wagga	
*Rogers' Meat Company, Orange	25,000
Sim Bros., Brooklyn, via Capertee	2,400
Swan, Reg., Peel-street, Tamworth	5,000
*Sydney Cold Stores, Sydney	30,000
Wallace and Ryan Ltd., Wagga Wagga	4,000

Ward, S. E., Kentucky	3,000
Werrima Orchard Cool Stores, Wingello	8,000
Westbury, F. J., Kentucky	2,000
*Young Cool Stores Co-op. Soc. Ltd., Young	20,000
Total	700,450

*Additional space available for cool storing other products.

SOUTH AUSTRALIA.

Producers' Cold Stores Ltd., Adelaide	100,000
S.A. Cold Stores Ltd., Mile End	60,000
Metropolitan and Export Abattoirs Board, Gepps Cross	53,000
Cudlee Creek Co-op. Society Ltd., Cudlee Creek	50,000
Lenswood Cold Stores Ltd., Lenswood	46,667
Balhannah Cold Stores Ltd., Balhannah	43,867
Gumeracha Fruitgrowers' Co-op. Society Ltd. Gumeracha	35,000
Sturt Producers' Society Ltd., Blackwood	34,000
Heysen, O., & Son, Adelaide	12,000
Govt. Produce Department, Light-square, Adelaide	8,000
Redden & Son, J., Verdun	8,000
Redden & Son, J., Cudlee Creek	7,000
Mattiske, B. A., Angaston	7,000
Norsworthy, S. E., & Co., Gumeracha	5,000
Norsworthy, P. G., Williamstown	3,500
Kelsey, R., Balhannah	3,000
Clare Ice and Cold Stores Ltd., Clare	1,500
	477,534



BUDGE

REFRIGERATION

Orchardists and others interested in the installation of small or large Cool Stores or extensions, are invited to communicate with us for plans, estimates and any other information relating to fruit storage equipment.

The Ammonia Compressor illustrated is fitted with capacity controls—a modern auxiliary which enables variation of Compressor capacity to suit lighter loads. It will give a 50% reduction in capacity and effect a corresponding saving in power.

JAMES BUDGE PTY. LTD.
McEvoy Street, Alexandria, Sydney, N.S.W.

Telephone: L 5034-5.

— AGENTS IN ALL STATES —

Established 1890.

TASMANIA.

	Capacity in Cubic Feet.
H. Jones and Co., Hobart	225,000
Moonah Cool Stores	60,000
Bender and Co., Launceston	60,000
Pt. Huon Fruit Growers' Cool Store (Co-op.), Pt. Huon	250,000
Huon Deep Water Cool Store, Port Huon	82,500
Huonville Cool Stores	175,000
Cygnets Cool Stores, Cygnet	100,000
Rostrevor Estate Cool Stores, Triabunna	25,000
Beauty Point Cool Stores, Beauty Point	80,000
E. A. Walpole, Sprayton	60,000
W. H. Calvert (and D. F.), Judbury	30,000
Calvert Bros., Waterloo	16,000
	<hr/>
	1,143,500

WESTERN AUSTRALIA.

(Case capacity not available.)

Westralian Farmers' Ltd.	Fremantle & Bridgetown
Illawarra Orchard Company	Karragullen
Mount Barker Cold Storage Co.	Mount Barker
Western Ice Company	Perth and Fremantle
Perth Ice Works	Perth
Bantocks Ltd.	Subiaco
W.A. Meat Export Co.	Robbs Jetty
Peters' American Delicacy Co.	Perth
Fremantle Cold Storage Co.	Fremantle
Collie Ice Works	Collie
Albany Freezing Works	Albany

NEW ZEALAND.

Auckland Farmers' Freezing Co., Auckland	125,000
Auckland Farmers' Freezing Co., Southdown	—
Turners & Growers Ltd., City Markets, Auck.	45,000
Radley & Co. Ltd., City Markets, Auckland	6,000
H. J. Masson, Te Kauwhata	2,700
W. J. McMiken, Hamilton	4,000
	<hr/>
Gisborne.	
Gisborne Refrigerating Co. Ltd., Gisborne	16,000
	<hr/>
Hawke's Bay.	
Watties Canneries, King-street, Hastings	26,000
Ashcroft & Edwards, Mills-street, Hastings	26,000
The Elite Bacon and Ice Co., Heretaunga-street, Hastings	22,500
C. H. Slater Ltd., 86 Aubyn-street, Hastings	35,000
W. Sisson, York-street, Hastings	10,000
J. E. Hope, Twyford, Hastings	12,000
A. Frost, Havelock North	9,000
J. H. Milne, Havelock North	7,000
H. G. Apsey & Co., Hastings-street, Hastings	6,000
E. J. R. Milne, Pukahu, Havelock North	5,000
E. French, Lyndhurst-road, Hastings	3,000
F. A. Mintoft, Thompson-road, Havelock Nth.	2,400
Palmerston North.	
Tiki Bacon Factory, Princess-street, Palmerston North	1,800
	<hr/>
Greytown.	
W. A. Tate	10,000
Wellington.	
Co-op. Dairy Farmers' Freezing Co.	80,000
Harbor Board Cool Stores, Wellington (pre-cooling)	28,000
Frozen Products, Wellington	45,000
Nelson.	
Nelson Freezing Works, Stoke	44,000
G. C. McMurtry, Waimea West	3,200
Maitland Cool Stores, Port Nelson	5,000
Motueka Cool Stores, Motueka	40,000
G. Hawkins, Westport	1,250

Canterbury.

Canterbury Orchardists' Co-op. Society	551 Colombo-street, Christchurch	20,000
Christchurch Fruit and Produce Co.	8,000	
Papanui Fruit and Storage Co., 27 Harewood-street, Christchurch	35,000	
Wardell Bros., Christchurch	4,000	
F. Sisson, 120 Sawyers Arms Road, Papanui, Christchurch	20,000	
E. A. Sisson, 83 Sawyers Arms Road, Papanui, Christchurch	5,000	
Radley & Co., Christchurch	3,600	
McFarlane & Co., Lichfield-street, Christchurch	2,500	
N.Z. Farmers' Co-op. Assn. Ltd., Christchurch Otago.		
Otago Dairy Products Cool Storage Co. Ltd., Dunedin	8,000	
Royal Ice Co., Dunedin		
Crystal Ice Cream Co. Ltd., Dunedin	4,500	
R. S. Black Freezing Works, Alexandra	3,000	
P. Mooney, Cromwell	300	
J. Bennetts, Roxburgh	500	
Total		735,250

JAMES BUDGE PTY. LTD.

Since the publication of our last "Fruit World Annual" there have been a number of new fruit stores built and many extensions made to existing cool stores in the various States of the Commonwealth. In addition, there have been extensions to Banana ripening and storage rooms and some new installations of this kind in N.S.W.

Messrs. James Budge Pty. Ltd., refrigeration engineers, Alexandria, Sydney, have just completed a Banana ripening and storage installation for Messrs. Gittins and Eastham Ltd., Newcastle, being responsible for the building and insulating of the four rooms, each of which has a capacity of 80 cases, and for the supply and installation of the automatic ammonia refrigeration equipment.

Messrs. Yock sui Bros., Ultimo-road, Sydney, also entrusted this firm with the remodelling of their Banana ripening and storage installation. The new arrangement of equipment is similar to that supplied to the Banana Marketing Board of N.S.W. and Messrs. Gittins and Eastham Ltd.

Among extensions made by Messrs. James Budge Pty. Ltd. to cool stores are the following:—

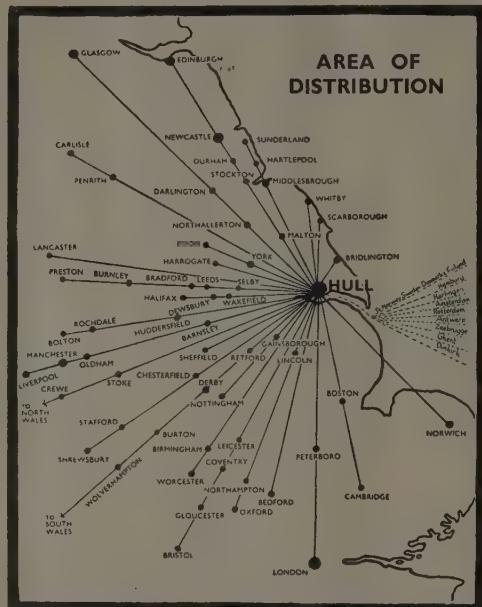
The construction and coiling of two new 12,000 case capacity Apple storage rooms for the Orange Fruit-growers' Co-op. Cool Stores Ltd., N.S.W., thereby bringing the capacity of this store up to 70,000 cases.

The supply of additional Atmospheric Condensers and Ammonia Expansion Coils for new Apple and Pear rooms totalling 16,000 cases for the Huonville Cool Stores Ltd., Tasmania.

A complete installation comprising 15-tons Ammonia Compressor, Atmospheric Condensers and Expansion Coils, for a store which, with recent additions, now totals approximately 20,000 cases, for Mr. E. A. Walpole, Spreyton, Tasmania.

All of these Apple and Pear storage rooms were equipped with direct expansion ammonia coils arranged on the ceiling with improved drip tray arrangements to ensure air circulation and freedom from water falling on fruit and floors.

It is interesting to notice that tests made recently, as well as practical operating experience, indicate the marked superiority of rooms so coiled.

**Fruit for Great Britain****The PORT OF HULL*****Is the FRUIT CENTRE***Serving a Population of Over 13,000,000 in the
NORTH AND MIDLANDS.**3rd Port in United Kingdom**

Buyers attend from all parts of England, Scotland, and the Continent. Regular sailings to Continental Ports provide unrivalled Markets for re-export of Empire Fruit.

Specially Constructed Refrigerator Vans carry Fruit direct from Steamer to inland destinations by Express Trains.

Rapid Handling, Quick Despatch, Low Charges, and the Best Prices — **SEND YOUR FRUIT TO HULL.**

TEN MODERN DOCKS entirely Owned & Managed by

The London and North Eastern Railway

Full Information and Booklets supplied by—

BURNS, PHILP & CO. LTD.

7 BRIDGE STREET, SYDNEY;

312 COLLINS ST., MELBOURNE & BRANCHES.

Exporters and Suppliers of
Apples, Pears, Grapes, Oranges

Head Office:
569 WELLINGTON ST.,
PERTH.

Shipping Office:
19 NEWMAN STREET,
FREMANTLE.

London Office:
7-8 LLOYD'S BANK CHBS.,
12 HENRIETTA ST.,
COVENT GARDEN, WC2.

Telegraphic & Cable Address:
"WESFARMERS."

Registered
Brand.

SHIPPIERS OF
SHELL EGGS.

GENERAL MERCHANTS.
SUPPLIERS OF ALL
FARMERS'
REQUIREMENTS.

COOL STORE
PROPRIETORS.

PRODUCE, WOOL & SKIN
BROKERS.

SHIPPING AGENTS.



PRODUCTS
... of ...
WESTERN AUSTRALIA

The Westralian Farmers
Limited



Fruit Export

World Fresh Fruit Production

INTERESTING STATISTICS FROM VARIOUS PARTS OF THE GLOBE.

World Production of Apples Estimated at 500,000,000 Bushels; Pears, 160,000,000 Bushels; Oranges 207,000,000 Boxes.

Argentine Increasing in Pear Production.

INTERESTING STATISTICS regarding world fruit production were recently compiled by the U.S.A. Department of Agriculture. While information was compiled regarding Plums, Peaches, Apricots, Bananas, Lemons, Grapefruit, berries, etc., we found it possible only to publish summaries regarding Apples, Pears and Oranges.

The information is as follows:—

FRUIT HAS LONG BEEN an important crop in the agriculture of most countries, although it was only in the last decade that production estimates have become available in a sufficient number of countries to provide an indication of the world production of various fruits.

The world estimated total production of fruits, including Grapes used for wine and Raisins averaged 65 million short tons in the five-year period, 1932-33 to 1936-37. Of this total, grapes for all purposes comprised 52 per cent., Apples 15 per cent., Oranges 9 per cent., Pears 6 per cent., Plums 5 per cent., Bananas 3 per cent., and all others 10 per cent.

The principal fresh fruits entering into world trade are Bananas, Oranges, Apples, Pears, Plums and Grapes. The exportation of fresh fruits on a large scale is a comparatively recent development and has been made possible by the development of refrigerated ships. In recent years, the trade in fresh fruits has probably been better sustained than in almost any other group of products. The stability of the fresh fruit trade is explained by several factors. Recognition given to the health values of fruit has created a better consumer demand than existed a few decades ago.

Apples.

Apples are probably the most important and most widely grown tree fruit in the world. They are second only to Grapes in quantity produced. Most of the Apples are produced in countries located in the Temperate Zones.

Apples may be classed in the following main groups: Dessert and cooking, cider and crab Apples. Dessert and cooking Apples form the bulk of the production in most countries including the United States. But in some European countries, particularly Germany, France and the United Kingdom, the largest part of the crop consists of cider varieties, which are too astringent for raw consumption. Apples are marketed as fresh, dried and

canned fruit, and are used in making a long list of products such as vinegar, brandy, candy, pectin, cider and jelly.

Reports from 29 countries indicate that the total production in the six years, 1931-36, averaged 416 million bushels. The United States, the largest producer accounted for over one-third of the six-year total. The world crop probably exceeds 500 million bushels annually if allowance is made for the crops in such important producing countries as China, Belgium and the U.S.S.R., for which definite information is lacking. Outside the United States, the most important producing countries are France and Germany, where the bulk of the crop is consumed at home.

The trend in the world total production is slightly upward, despite the gradual decline in the production in the United States, also of Apples in the leading exporting countries. Upward trends are in Canada, Australia, Italy, New Zealand and Switzerland.

Exporting countries have been forced to adopt quality and in some instances quantity control of Apple exports in order to compete successfully in the world market. It has been found that only the best fruit can be sold at prices high enough to cover the cost of transportation, import charges and other expenses incurred when fruit is exported to distant countries.

The United States is the leading Apple exporting country, but in recent years exports have declined due to several factors. The most important of these are the reduced purchasing power resulting from the world-wide depression, increased trade barriers and the growing competition resulting from improvement in the quality of Apples produced and the increase in production that has taken place in many countries.

Canadian Apples offer the most competition to American Apples in foreign markets, particularly in the United Kingdom, where Canadian Apples enter duty free. Lesser important competing countries are Switzerland, Czechoslovakia, Italy and Austria. The major importing countries are the United Kingdom, France, Germany, the Netherlands, and Belgium.

WORLD FRESH FRUIT PRODUCTION—(Continued).

Estimated Apple Production in the Principal Countries of the World.

Country.	Average.	Average.	1936.	1937.(1)			
	1920-25.	1926-30.					
			bush.	bush.	bush.	bush.	bush.
United States . . .	155,772	162,977	117,506	206,716			
Germany (8) . . .	(3)	(2)40,000	27,006	85,995			
*France (8) (7) . .	69,065	66,812	138,785	67,951			
Eng. & Wales (4) . .	(5)9,302	9,486	17,715	(2)9,000			
Eng. & Wales (6) . .	(5)3,018	2,956	6,144	(2)3,000			
Italy	(3)	(9)12,029	13,278	15,348			
Canada	10,753	9,959	12,346	14,869			
Austria	12,181	7,573	(2)11,000				
Australia	6,944	7,887	(2)9,500	(2)9,500			

Bureau of Agricultural Economics. Compiled from official and trade sources and reports of the International Institute of Agriculture. Crops in Northern Hemisphere countries blossom and are harvested in year shown; Southern Hemisphere crops blossom in year shown, but are harvested after January 1. Thus, the 1934-35 crop in Australia is placed with the 1934 crop of Northern Hemisphere countries. (1) Preliminary. (2) Rough approximation. (3) Not available. (4) Dessert crop. (5) 3-year average. (6) Cider crop. (7) Cider crop, estimated at 60 per cent. of total cider Apple and Pear figure. (8) No official estimates prior to 1933. Total dessert and cider crop (9) 2-year average. *In addition France has a dessert crop estimated at 7,000,000 bushels annually.

Pears.

Pears are the third most important tree fruit grown and the fourth most important fruit for which production statistics are available. Production is chiefly con-

fined to countries in the Temperate Zones. Over half of the Pears produced are either dessert or cooking Pears, though large quantities of cider Pears are grown in certain European countries. Pears are consumed in the form of canned, dried and fresh fruits and are used in making cider, jellies, jams and preserves. Although most varieties of Pears are highly perishable, the development of cold storage and the improvement in packing and handling has lengthened the marketing season for fresh Pears by several months.

Total production of Pears in the 27 reporting countries averaged 146 million bushels in the six years, 1931-36. If more adequate production information were available for such countries as Belgium, Argentina, China and the U.S.S.R. the world total probably would be around 160 million bushels. France is the largest producer of Pears, followed by the United States and Germany. French and German production consists chiefly of cider varieties. The United States is the outstanding producer of dessert Pears and also most important for canned and dried Pears. Probably not over one-third of the Pears produced in the world can be classified as dessert quality and around one-half of this total is grown in the United States.

The trend in total Pear production is somewhat downward. Production of dessert Pears is increasing, due primarily to the upward trend in the United States. Production apparently is increasing, also in Italy, Switzerland, Australia and New Zealand.

The United States is the leading exporter of fresh, dried and canned Pears. The principal competitors of the United States are Italy and Switzerland in the fall and the winter months and Australia, New Zealand, South Africa and Argentina in the late winter and spring months. Competition is increasing from the latter group.



A NICELY LAID OUT ORCHARD CARVED OUT OF THE BUSH.

Pears.

Production in the Principal Countries of the World.

Country.	Average. 1921-25.	Average. 1926-30.	1936.	1937.(1)
	1,000	1,000	1,000	1,000
	bush.	bush.	bush.	bush.
United States . . .	17,599	23,190	26,956	29,822
Germany (6) . . .	(3) (2)	18,000	17,412	20,260
France (4) . . .	4,676	3,959	5,173	4,251
France (5) . . .	46,043	44,541	20,147	9,863
Italy (7)	(3) (8)	7,222	8,000	
Switzerland	7,090	6,751	8,000	
Japan	4,937	6,380	(2) 7,000	
Yugoslavia	3,883	3,078	3,248	2,866
Australia	1,464	1,620	2,400	(2) 2,500

Crops in Northern Hemisphere countries blossom and are harvested in year shown; crops in Southern Hemisphere countries blossom in year shown but are harvested after January 1. Thus, the 1934-35 crop in Australia is placed with the 1934 crop of Northern Hemisphere countries. (1) Preliminary. (2) Rough approximation. (3) Not available. (4) Table Pears, estimated at 40 per cent. total table Apple and Pear figure. (5) Cider Pears, estimated at 40 per cent. total table Apple and Pear figure. (6) No official estimates prior to 1933. Total table and cider crop (7) Include Quince and Pomegranates. (8) 2-year average.

Oranges.

Total Orange and Mandarin production for the 27 countries reporting has increased rapidly from an average of 133 million boxes in the five years 1922-26 to 207 million boxes in the five-year period 1933-37. Production in the United States has increased considerably, but the principal gains have occurred in countries where Orange production is a relatively new development and has become commercially important only in the last decade.

Palestine, Brazil, and South Africa, for example, produced an average of 17 million boxes during the five years 1927-31, but totalled 42 million boxes in the 1937 season. Algeria, Cyprus, Egypt, Italy, and Japan also report upward trends in production.

The United States has the largest number of trees and production is increasing. Tree numbers in the United States increased from 32 million trees in 1930 to 39 million in 1935. Japan reported 32 million trees in 1935, compared with 28 million in 1929. Most of the trees in

Japan, however, are Mandarin varieties. Spain had about 24 million trees in 1929 and 30 million in 1933, the last season for which reliable estimates are available. Neither Palestine nor Brazil report tree numbers but unofficial estimates suggest a large increase in tree numbers. New plantings and maturing young trees indicate a continuing production increase in Palestine, Algeria, Egypt, the Union of South Africa and Brazil, as well as in the United States.

Spain is the world's largest exporter of Oranges, followed by Palestine, Italy, the United States, Brazil and the Union of South Africa. The production trend for Brazil, Palestine, South Africa, Algeria and Italy is rapidly upward, increasing from an average of 27 million boxes in the five years, 1927-31 to 61 million during the five years 1933-37.

Oranges and Mandarins.

Production in the Principal Countries of the World.

Country.	Average. 1922-26.	Average. 1927-31.	1936.	1937.(1)
	1,000	1,000	1,000	1,000
	boxes.	boxes.	boxes.	boxes.
United States . . .	31,706	43,177	52,073	55,174
Spain	(4) 31,326	37,358	29,149	44,823
Brazil	(3) 5,512	12,346	36,039	(2) 36,500
China (2)	25,000	25,000	25,000	25,000
Japan	(5) 9,502	11,218	17,274	(2) 15,000
Italy	(3) 9,413	8,417	10,148	13,188
Palestine	(6)	2,560	6,000	11,500
Australia	1,797	2,169	2,658	(2) 2,600

Harvesting in Northern Hemisphere countries begins in the year previous to the one shown, whereas the harvesting in Southern Hemisphere countries takes place in year shown. For instance, 1937 production in most Northern Hemisphere countries began from September to November, 1926, and was completed between April and October, 1937. (1) Preliminary. (2) Rough approximation. (3) 1 year only. (4) 2-year average. (5) 4-year average. (6) Not available.

The area under vines in Australia for the production of dried fruits is 57,389 acres. The growers number some 5,500, and they need the services of 8,000 employees. There are some 40,000 people dependent for their living on the dried fruits industry.



APPLE PACKING SHED.

Note conveyor and other up-to-date facilities.

Australian and N.Z. Apples and Pears

REVIEW OF THE 1939 EXPORT SEASON.

THE SALE of Australian and New Zealand Apples in the United Kingdom in 1939 was satisfactory on the whole, states the annual report of Messrs. F. W. Moore & Co., London, with the exception that the prices for late shipments from Australia "tailed off" disappointingly.

Continuing, the report points out the unfavorable growing season in 1938-39, due to drought and bushfires. In greater or lesser degree the fruit bore the mark of this havoc. N.S.W. made its smallest export to U.K. for many years; the Victorian export was much below the usual quantity, though Pears were nearer than expected to the previous year's total; S. Australian Romes were probably the best ever shipped from Australia, but their Jonathans lacked color. Tasmania more or less maintained its enhanced reputation; their packing and presentation of the fruit received favorable comment; Western Australia, despite some setbacks by the weather, made a record export—roundly 1,200,000 cases of Apples and upwards of 65,000 packages of Pears to U.K. and Continent. Their Granny Smith, Yates, and late red Apples were excellent, but generally the W.A. fruit was not up to its previous splendid standards. These remarks also apply to N.Z. fruit, though the 1939 deliveries were an improvement on 1938. Their weather conditions were responsible for the drop in exports of Apples to U.K. and Continent to 861,306 boxes in 1939, as compared with 1,002,134 in 1938.

PEARS.

Continuing, the report states that the Pear position was not so satisfactory as the preceding year. The 1938 Pear crop in U.S.A. was a record one of over 32,000,000 bushels, with a 60 per cent. heavier export to U.K. than in the previous year. Thus for several months prior to the Australasian season the British markets were nearly always over supplied with Pears. The adverse climatic conditions in Australia affected the quality of the Pears.

The need for reviewing the varieties of Pears from Australia and N.Z. has been referred to several times. It is now noted that Australia will only permit export of the following varieties to U.K. in the future:—

B. Bosc, B. d'Anjou, B. Hardy, Doyenne du Comice, Easter Beurre, Glou Morceau, Josephine, Madam Cole, Packham's Triumph, Winter Cole, Winter Nelis and Giblin's Seedling.

New Zealand is urged to similarly review and reduce her Pear export variety list for the benefit of her growers.

British Provincial Ports.

The matter of shipments to provincial ports and varieties suited to those markets is dealt with: it is considered that this matter should receive attention after the war.

Anglo-U.S.A. Treaty.

The trade treaty entered into between Britain and U.S.A. was well received by the fruit trade and commercial interests of Britain. It was following the Imperial

Conference at Ottawa in 1932, at which Mr. J. B. Mills performed excellent work in that the British Customs duty of 4/6 per cwt. was instituted in respect of imports into U.K. of foreign grown Apples and Pears—the principal suppliers, of course, being U.S.A. This duty applied from 1933 till 1938 inclusive.

In 1939 the new rates provided for in the Anglo-U.S.A. trade treaty were effected, viz.—

Apples—	Per cwt.
August 16 to April 15	3/-
April 16 to August 15	4/6
 Pears—	
August 1 to January 31	3/-
February 1 to June 30	4/6

As will be seen, for the greater part of the season in England, the imports from Australia, N.Z. and Empire sources have had, or they will have in the future, the protection of the 4/6 rate as before. Further experience is needed regarding the period of the lower duty, but the general impression is that it will not seriously affect the capacity of the British markets for Australasian Apples and Pears.

Empire Fruit Producers' Conference.

In June, 1939, an Empire Fruit Producers' Conference was held under the auspices of the Empire Fruits Council, delegates being present from Canada, Australia, New Zealand, South Africa, Southern Rhodesia, and the British West Indies, plus, of course, United Kingdom representation. Many subjects were debated. In the case of Apples and Pears from Australia and N.Z., the Conference recommended:—

1. That the regulation of exports on a qualitative and quantitative basis be continued.
2. That the 1938 quotas be submitted as a basis for 1940 for the consideration of the Australian and N.Z. authorities.
3. That, as far as practicable, no shipments should arrive—i.e. at United Kingdom ports—later than July 31.

"Our comments," state Messrs. Moore & Co. Ltd., "need only be brief, in the circumstances now prevailing, and they are that in normal times we are whole-heartedly in favour of the proposal to restrict arrivals at this end to the period ending July 31."

"The subject of the setting up of Commodity Councils to regulate the supply of Apples and Pears into the United Kingdom arose during the Conference, and from a subsequent address by Col. The Rt. Hon. Sir Reginald Dorman-Smith, the Minister for Agriculture and Fisheries, one learned that the proposal had Government support. In the expectation that, whilst likely to be deferred in consequence of the conditions brought about by war, the time will come when the subject of Commodity Councils will be revived, it occurs to us to give hereunder our record of imports of Australian and New Zealand Apples and Pears into United Kingdom ports for the period commencing 1930":—

Shipments to United Kingdom.

	From Australia.		From New Zealand.	
	Apples.	Pears.	Apples.	Pears.
	Cases.	Cases.	Cases.	Cases.
1930 . . .	3,114,809	334,177	951,035	39,377
1931 . . .	2,446,194	416,335	853,210	57,286
1932 . . .	4,153,571	345,068	1,332,025	90,992
1933 . . .	4,956,861	686,127	1,164,259	125,238
1934 . . .	3,693,728	395,938	1,112,081	126,334
1935 . . .	3,773,375	600,721	746,091	117,158
1936 . . .	4,175,886	635,700	961,558	109,553
1937 . . .	3,839,729	769,750	719,515	41,581
1938 . . .	3,959,761	580,308	1,002,184	81,150

The Outlook Ahead.

The report then deals with the major events leading up to the war and the total uncertainty as to any refrigerated shipping space being available for sending Apples and Pears from Australia and New Zealand to U.K. However, the report concludes with some thoughtful remarks regarding the normal trade, thus: "While the course of the fresh fruit market in Britain, whether for Apples or Oranges or other fruits, is regarded by us as unpredictable, we admit that the experience of the 1939 season has caused us to think that, subject to a continuance of regulatory measures at the growing and shipping end and to a policy of careful selection being pursued, there will continue to be a place for our Apples and Pears on the markets of Great Britain."

Arrivals of Australian and N.Z. Fruit, 1939 Season.

Summary, 1939.

	Tasmania.		Mainland.		New Zealand.		Total.	
	Apples.	Pears.	Apples.	Pears.	Apples.	Pears.	Apples.	Pears.
United Kingdom . . .	2,371,579	273,796	1,418,246	372,622	657,333	93,142	4,447,158	739,560
Continent	434,857	—	339,989	24,029	203,973	992	978,819	25,021
Total	2,806,436	273,796	1,758,235	396,651	861,306	94,134	5,425,977	764,581

	Tasmania.	W.A.	Vic.	N.S.W.	Sth. Aus.	Qld.	Total.
	Apples.	Apples.	Apples.	Apples.	Apples.	Apples.	Apples.
Total Arrivals, Season 1939 . . .	2,806,436	1,214,099	238,988	9,645	277,909	17,594	4,564,671
Total Arrivals, Season 1938 . . .	2,733,660	469,487	639,280	81,736	606,029	20,539	4,550,731
Total Arrivals, Season 1937 . . .	2,686,437	615,285	701,171	82,241	246,372	13,652	4,345,158

Distribution, 1939.

London	1,540,420	533,755	163,670	8,129	127,671	14,605	2,388,250
Hull	269,674	35,366	3,869	—	59,185	—	368,094
Liverpool	381,471	145,304	37,147	—	30,159	2,889	596,970
Glasgow	90,021	153,867	18,894	40	6,658	100	269,580
Southampton	55,813	52,644	14,381	—	7,126	—	129,964
Manchester	21,666	2,787	—	—	—	—	24,453
Avonmouth	12,514	—	—	—	—	—	12,514
Antwerp	106,048	—	—	1,476	—	—	107,524
Hamburg	234,927	180,240	—	—	29,890	—	395,057
Rotterdam	—	20,457	1,027	—	—	—	21,484
Dunkirk	45,694	—	—	—	—	—	45,694
Hook of Holland	27,014	—	—	—	—	—	27,014
Gothenburg	21,174	—	—	—	—	—	21,174
Stockholm	—	139,679	—	—	17,220	—	156,899
United Kingdom	2,371,579	923,723	237,961	8,169	230,799	17,594	3,789,825
Continent	434,857	290,376	1,027	1,476	47,110	—	774,846
Grand Total	2,806,436	214,099	238,988	9,645	277,909	17,594	4,564,671

The Jonathan is stated by an expert to be on the whole a poor storage variety, and as few retain their normal flavor after September, it is a mistake to market flavorless fruit during the latter part of the year when better-keeping varieties are available.

It is recommended that for the control of soft scald, Jonathans should be stored at 36 deg. until the end of April, then at 34 deg. during May, and at 32 deg. from June onwards. Pre-storage factors responsible for soft scald include maturity at picking time, temperature of the Apples, and period of delay before storage.

King Cole (one parent of which is the Jonathan) is subject to soft scald, and should be stored under the same conditions as Jonathans.

It has been found that Apples exposed to high temperatures before storage are more liable to scald, therefore it is a bad practice to stack Apples in iron sheds prior to storage.

It is recommended that all varieties subject to superficial scald should be wrapped in oil wraps and placed in cool storage promptly after picking.

Producers' Co-operative Distributing Society Ltd.

LICENSED FARM
PRODUCE AGENTS

P-D-S

EXPORTERS TO ALL
PARTS OF THE WORLD

Municipal Fruit Markets - Sydney and Melbourne

THE SOCIETY SPECIALISES IN CITY AND COUNTRY DISTRIBUTION OF ALL FRUIT AND VEGETABLES. SURPLUS PROFITS ARE ANNUALLY DISTRIBUTED AMONG CONSIGNORS.

For Information and Particulars apply to—

SYDNEY: Box 86C, P.O., Haymarket. MELBOURNE: Box 4013, G.P.O., Melbourne.

ORCHARD REQUISITES — BOX SHOOKS — BLACK LEAF 40 — WOOD WOOL — WRAPPING PAPER — CORRUGATED STRAWBOARD PADS — SUPPLIED AT LOWEST RATES.

— ALSO —

CUTLER FRUIT GRADERS, the best machines designed in America for Apples and Pears.

Shipping No. 51

Fruit Growers

**DON'T TAKE
RISKS**

Consign to—

Established 1892

A. J. COOPER Pty. Ltd.

Fruit Merchants - Importers and Exporters
Licensed Farm Produce Agents

2 City Markets - - Quay Street, Sydney

BRANCH STORE: NEW FRUIT MARKETS.

Phone: MA 2625; After Hours: UA 3958.

Telegraphic Address:
"FRUIT," Sydney.

Bankers:
Bank of N.S.W., Bathurst St., Sydney.

Prompt Attention - Efficient Service - Highest Returns

SELECTED FOR MEMBERSHIP IN THE PANEL OF AGENTS BY THE TASMANIAN FRUIT BOARD.

Charts and Illustrations Showing Methods of Packing Fruit

APPLES, PEARS, ORANGES, LEMONS, GRAPEFRUIT, PEACHES, PASSIONFRUIT AND TOMATOES.

(Compiled by Basil P. Krone, Fruit Packing Instructor, Victorian Department of Agriculture.)

IF FRUITGROWERS ARE TO COMPETE successfully on overseas markets, it is essential that they should adopt the methods of packing already in use by other large fruit-producing countries.

Although there are many attractive methods of packing fruit, it has been discovered that some seemingly good packs are quite unsuitable. Complaints of slack packing and damaged fruit have caused many investigations to be made, with the result that a number of problems have now been overcome.

The experience of past years has shown that packing, with a comparatively large pocketing system, contributes more largely to better transport conditions of the various fruits than do the tight packs with their small pockets or spaces between the fruit.

The trend of advancement is to adopt packs that produce these larger pockets, for example, if Apples are packed tightly with say five layers in the case, it would be a better policy to pack them more loosely, viz., less Apples per layer, but six layers in the case.

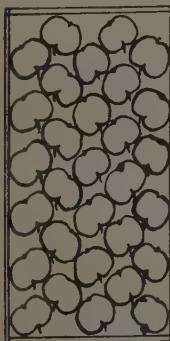
This looser method of packing permits the fruit at each end of each layer to be nested just slightly deeper than the rest, so that when the top layer is finished, the bruising, which so frequently occurs in the lidding process, is eliminated.

With this style of packing the contents are held gently but firmly by packing the fruit much higher than the top of the case. When fruit is packed high in this manner, very thin flexible lids are required. The lids cannot be too thin, provided they are strong enough not to break. The flexibility of our present lids should be increased by using peeled timber or making them of three or four

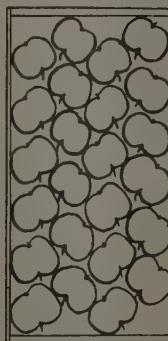


CHART FOR PACKING APPLES IN THE AUSTRALIAN DUMP CASE.

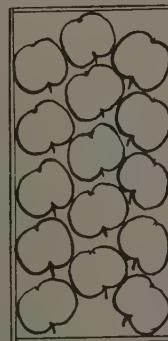
Inside Measurements, 18 inches Long, 8 2-3 inches Wide, 14½ inches Deep.



3-2 Pack.



2-2 Pack.



2-1 Pack.

Showing the method of placing Apples in the bottom layer of 3-2, 2-2 and 2-1 pack.

Correct height is obtained by adopting the following rule:—All sizes are packed firmly with the exception of 2½ inch with 175 Apples, small 3 inch with 108 Apples, and 3½ inch with 53 Apples; these should be packed more loosely than usual.

narrow laths instead of two wide ones, and riveting them to the cleats. They should also be cut a quarter of an inch, or more, longer than the length of the case, to permit of them bending over the bulge or crown which is formed.

Lids for fruit cases are as important as the cases themselves. Unsuitable lids have been one of the causes of slack packing with Victorian Oranges and Apples, and they are an embarrassment to the packer, because they prevent him packing the fruit to the correct height.

Any lid which cannot be nailed over a 2-inch bulge without a press is not suitable to be forced over perishable fruit. The function of a lidding press should be to facilitate the work, not to crush fruit down with unresisting lids.

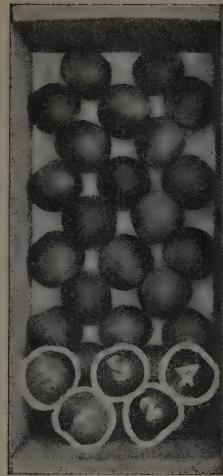
The side boards of export cases should be just the opposite, viz., thick, unresisting and strong. A packed case of fruit with a bulging side is a calamity; the objective of the packer is defeated, and the fruit is severely bruised in the stacks.

In the Apple box corrugated cardboards are used to prevent chafing of the fruit by the laths, but as these are detrimental to the shipping of Oranges, the inside of the latter cases should be smoothly dressed, the edges of the laths bevelled, and the centre partition board chamfered.

During the last few years, the interstate trade with Tomatoes has rapidly increased and it is recommended that half-cases lined with white lining paper, and careful color grading, be adopted. These details, together with packing charts for the various fruits and salient points from the regulations concerning grading, are attached.

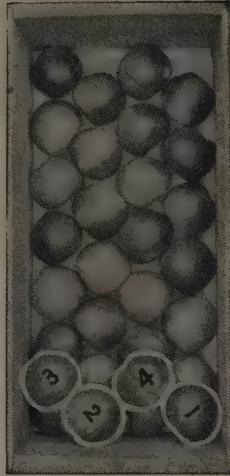


Size.	Approximate.	Pack.	Lay.	Total.	Remarks.
	er.	er.	ers.		
24"	3—2	8 x 8	7	280	Small flat shape
	3—2	8 x 7	7	263	Flat shapes
	3—2	7 x 7	7	245	Small quarters
	3—2	7 x 6	7	228	Medium quarters
	3—2	6 x 6	7	210	Large quarters
21½"	3—2	6 x 5	7	193	Small halves
	3—2	5 x 5	7	175	Medium halves (pack more loosely than usual)
	3—2	5 x 4	7	158	Large halves
	2—2	7 x 7	6	168	Large halves—seldom used
21"	2—2	7 x 6	6	156	Small three-quarters
	2—2	6 x 6	6	144	Medium three-quarters
	2—2	6 x 5	6	132	Large three-quarters
	2—2	5 x 5	6	120	Large three-quarters
3"	2—2	5 x 4	6	108	Small to medium (pack more loosely than usual)
	2—1	7 x 7	5	105	Flat shapes
	2—1	7 x 6	5	98	Flat shapes
	2—1	6 x 6	5	90	Large 3 in.
3½"	2—1	6 x 5	5	83	
	2—1	5 x 5	5	75	
	2—1	5 x 4	5	68	
	2—1	4 x 4	5	60	
3½"	2—1	4 x 3	5	53	Pack more loosely than usual



THE 3-2 PACK IN THE DUMP CASE.

This illustration shows how to commence the first and second layers. Note the angles at which the Apples are placed. The numbers show the commencement of the second layer with the Apples resting on the pockets or spaces caused by the way the fruits beneath are placed.



THE 2-2 PACK IN THE DUMP CASE.

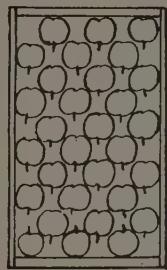
Left.—The numbers show the angles at which the Apples should be placed in the first and second layers.

Right.—Finished case of $2\frac{3}{4}$ -inch Apples, 6 x 5 layer, 6 layers. Total 132.

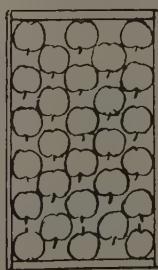


HINTS FOR THE PACKER.

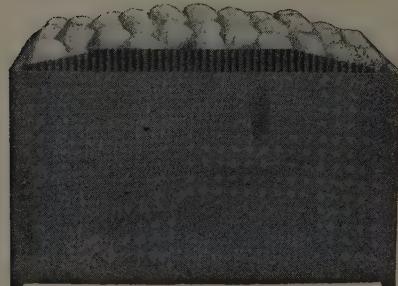
Interstate Markets:—When Apples are packed from cool storage for interstate markets they are particularly susceptible to bruising. The fruit should not be packed too tightly or too high. Cases should be lined with corrugated cardboards at top, bottom, and sides. Correct height is obtained by adopting the following rule:—All sizes are packed firmly with the exception of $2\frac{1}{2}$ -inch with 175 Apples, small 3-inch with 108 Apples, and $3\frac{1}{2}$ -inch with 53 Apples; these should be packed more loosely than usual.



3-3 Pack.



3-2 Pack.



Correct use of side cardboards protects the bulge. If cardboards are of insufficient width, pull them up a little after the bottom layer has been packed.

PACKING CHART FOR APPLES IN THE CANADIAN CASE.

18 x $11\frac{1}{2}$ x $10\frac{1}{2}$ inches, inside measurements.

Count & Size, ins.	Pack.	Layer.	Layers.
270	3-3	8 x 7	6
252	3-3	7 x 7	6
234*	3-3	7 x 6	6
216*	3-3	6 x 6	6
198*	3-3	6 x 5	6
180*	3-3	5 x 5	6
175* flat	3-2 Apples	7 x 7 only	5
163*	3-2	7 x 6	5
"	3-2	5 x 4	6
162*	3-3	5 x 4	5
150*	3-2	6 x 6	5
138*	3-2	6 x 5	5
125*	3-2	5 x 5	5
113	3-2	5 x 4	5
100	3-2	4 x 4	5
96	2-2	6 x 6	4
88	3-2	4 x 3	5
88	2-2	6 x 5	4

* The figures marked * are the counts recommended for export.

Remarks.

To obtain correct height the following rule should be observed:—The smallest Apples intended for the 3-3 and 3-2 packs should be packed a little more tightly than usual, while the largest Apples intended for these packs should be packed more loosely than usual.

With Jonathans the 198 count will include almost equal numbers of large $2\frac{1}{2}$ in. and small $2\frac{3}{4}$ in. Apples, likewise the 150 count will include almost equal numbers of large $2\frac{1}{2}$ in. and small $2\frac{3}{4}$ in. Apples. With flat varieties these counts are $2\frac{1}{2}$ in. and $2\frac{3}{4}$ in. respectively.

Note.—The nett weights of all varieties of Apples exported from Victoria will vary between 43 lb. and 48 lb., according to count and variety. (If Jonathan 43 lb. to 45 lb.) If sizes are adopted with some varieties the 198 and 150 counts will be found underweight.

Special Note.—The correct adjustment of an efficient fruit-grading machine will automatically produce a rotation in its bins each count as shown on this chart. Some machines produce two counts per bin.

**CHART FOR PACKING YATES APPLES
IN THE CANADIAN CASE.**

18 x 11½ x 10½ inches, inside measurements.

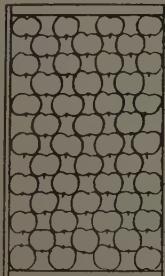
(Packing to counts and not to sizes eliminates underweight cases in the export trade.)

The "straight" method of diagonal packing.

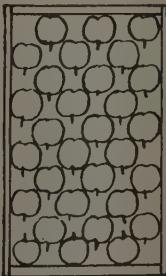
Approximate Pack. Lay- Lay- Total. Remarks.
Size. er. ers.

Inches.				
2½	{ 4-3 7 x 7 7	343	Smallest possible 2½ Apple.	
	{ 4-3 7 x 7 6	319	Suitable only for the "crown" pack.	
	3-3 8 x 8 6	288	Commence the usual "bulge" packing with this count.	
	3-3 8 x 7 6	270	This count includes large 2½ in. and small 2½ in. It is therefore between the sizes.	
2½	{ 3-3 7 x 7 6	252		
	{ 3-3 7 x 6 6	234		
	{ 3-3 6 x 6 6	216		
2½	{ 3-3 6 x 5 6	198		
	{ 3-3 5 x 5 6	180		
2½	{ 3-2 7 x 6 5	163	The smallest possible 2½ in. Apple.	
	{ 3-2 6 x 6 5	150		
	{ 3-2 6 x 5 5	138		
3	{ 3-2 5 x 4 5	113		
	{ 3-2 5 x 5 5	125	The smallest possible 3 in. Apple.	

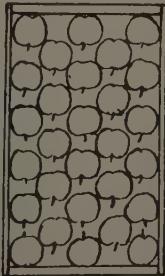
Note.—The net weight of Apples will vary between 43 lb. and 46 lb. if counts are adopted. The 216 and 288 counts will be found underweight if sizes are adopted.



4-3 Pack.



3-3 Pack.



3-2 Pack.

The Pear production in U.S.A. in 1938, reached the record figures of 32,500,000 bushels. The 1939 crop is estimated at 10 per cent. less.

**SPECIAL PACKING CHART FOR JOSEPHINE PEARS
IN THE LONG BUSHEL CASE.**

26 x 6 x 14½ inches, Inside Measurements, Clear of the Division.

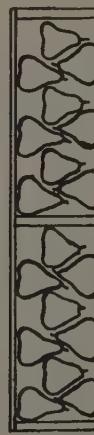
This chart is recommended when Josephine Pears are being packed for export in the Australian Long Bushel Case.

Size.	Pack.	Lay- er.	Lay- ers.	Total.	Remarks.
2½	2-1	5	x 5	8 240	
2½	2-1	5	x 4	8 216	
	2-1	4	x 4	8 192	Pack a little more loosely than usual.
2½	2-1	4	x 3	8 168	Pack a little more loosely than usual.
	2-1	3	x 3	8 144	Pack a little more loosely than usual.
2½	2-1	3	x 3	7 126	Stalks face sideways.
	2-1	3	x 2	7 106	Stalks face sideways.
3	2-1	3	x 2	6 90	Normal pack.
	1-1	4	x 4	6 96	Stalks face sideways.
3½	1-1	4	x 3	6 84	Stalks face sideways.

A complete observance of the methods of packing shown in the diagram is essential for satisfactory results.



2-1 Pack.
Usual method.



2-1 Pack.
126 count.



2-1 Pack.
106 count.



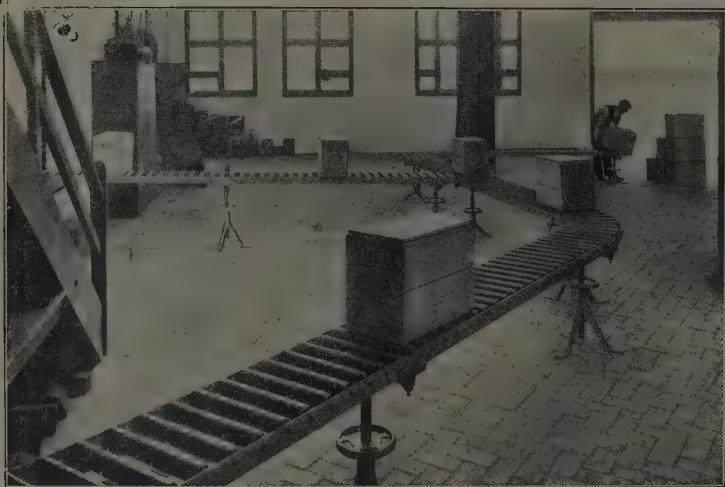
1-1 Pack.
96 count.

Showing the method of placing Josephine Pears in the bottom layer of the long bushel case for the 2-1 and 1-1 packs. For the 126, 106 and 96 counts the stalks face sideways.

PACKING ILLUSTRATIONS.

The blocks and illustrations published on this page and other pages of the packing section of this "Annual" are by courtesy of the Editor of the "Journal of Agriculture," Department of Agriculture, Melbourne.

GRAVITY BALL-BEARING ROLLER CONVEYOR—



Solves Your
Handling Problems . . .
**Quicker, Easier
and Cheaper**

◆◆◆
No Power Required.
◆◆◆

If you want to save
money in the handling of
your goods—
CONSULT US

◆◆◆
For further details write,
call, or phone.

THE SCHUMACHER MILL FURNISHING WORKS PTY. LTD.
GRAHAM STREET, PORT MELBOURNE, VIC. — P.O. BOX 2. Phone: MX 2171, 2172.

McROSTIE & GROWERS Pty. Ltd.

Fruitgrowers' Representatives
Freight and Shipping Agents

Representing some of the Largest
Fruitgrowers' Associations in Australia.

**249 FRANKLIN STREET
MELBOURNE, C.1.**

Also at ADELAIDE, South Australia.

Telephones:
F 2915, F 3338.

Cables & Telegrams:
"GROWREP."



Telephones: F 4394; After Hours: F 5575, F 3528.
Telegrams and Cables: "PAXINOS," Melbourne.

D. S. LUCAS & CO.

SHIPPING
NO.
91

ACCREDITED SELLING AGENT:—
S.A. TOMATO, CELERY, AND WEST
AUSTRALIAN TOMATO ASSOCIATION.

FRUIT AND BANANA MERCHANT,
IMPORTER AND EXPORTER, AND
GENERAL COMMISSION AGENT.

Prompt Returns. £1,000 Fidelity Bond.

9 Wholesale Fruit Market

Box 4076, G.P.O., Melbourne.

PEAR PACKS FOR THE 8½-INCH STANDARD PEAR CASE.

Inside Measurements, 18 inches Long, 11½ inches Wide,
8½ inches Deep.

Sizing in the well-known gradations of $\frac{1}{4}$ inches is the cause of faulty packs. Sizing for each count should be uniform. Packing to count and not to size is recommended for adoption. Approximate sizes are shown; these vary according to the type of Pear and are only intended as a guide to the operative.

Count.	Lay-	Pack.	Layer.	ers.	Remarks.
245	4-3	7 x 7	5		
228	4-3	7 x 6	5		
210	4-3	6 x 6	5	Approx. 2 in.	
193	4-3	6 x 5	5	2 in. if Bosc.	
180	3-3	6 x 6	5	Approx. 2½ in.	
165	3-3	6 x 5	5	2½ in. if Bosc.	
150	3-3	5 x 5	5	Approx. 2½ in.	
135	3-3	5 x 4	5	2½ in. if Bosc.	
120	3-3	4 x 4	5	Approx. 2½ in.	
120	3-2	6 x 6	4		
105	3-3	4 x 3	5	Special count for Bosc 2½ in.	
110	3-2	6 x 5	4	2½ in. if Bosc.	
100	3-2	5 x 5	4		
90	3-2	5 x 4	4	Approx. 3 in.	
80	3-2	4 x 4	4		
70	3-2	4 x 3	4	Approx. 3½ in.	

Warning.—Unless lids are thin and suitably flexible, the fruit will become severely "case marked" in the lidding operation. Lids should be cut at least $\frac{1}{4}$ inch longer than the sides of the case. Hemlock and spruce lids may be soaked in water before lidding.

The nett weight will vary between 44 and 49 lb., according to variety and count.

PACKING CHARTS FOR PACKHAM'S TRIUMPH AND BEURRE BOSC PEARS IN THE LONG BUSHEL CASE.

26 x 6 14½ inches. Inside Measurements, Clear of the Division.

Packham's Triumph.

Approximate.	Pack.	Lay-	Lay-	Total.	Remarks.
Size.	er.	ers.	er.	ers.	
2 { 2-1	5 x 5	8	240	{	Recommended for W. Cole,
{ 2-2	4 x 3	8	224	{	W. Nelis, etc.
2½	2-1	5 x 4	8	216	Normal pack
2½	2-1	4 x 4	8	192	Normal pack
2½	2-1	4 x 3	8	168	Normal pack
2½	2-1	3 x 3	8	144	Pack more loosely than usual
2½	2-1	3 x 3	7	126	Normal pack (sometimes 2½ and small 2½)
2½	2-1	3 x 2	7	106	Pack more loosely than usual
2½	2-1	3 x 2	6	90	Normal pack (see special note)
3	1-1	4 x 4	6	96	Stalks face sideways
3	1-1	4 x 3	6	84	Stalks face sideways
3½	1-1	3 x 3	6	72	Stalks face sideways

Special Note.—Large 2½ and small 3-inch are frequently mixed and packed as 96 count.

Beurre Bosc.

Approximate.	Pack.	Lay-	Lay-	Total.	Remarks.
Size.	er.	ers.	er.	ers.	
2½	2-1	5 x 4	8	216	Normal pack
2½	2-1	4 x 4	8	192	Normal pack
2½	2-1	4 x 3	8	168	Normal pack
2½	2-1	3 x 3	8	144	Normal pack
2½	2-1	3 x 2	8	120	Pack more loosely than usual
2½	2-1	3 x 2	7	106	Pack more tightly than usual
2½	1-1	4 x 3	7	98	Stalks face sideways (see special note)
	1-1	4 x 4	6	96	Stalks face sideways
3	1-1	4 x 3	6	84	Stalks face sideways
	1-1	3 x 3	6	72	Stalks face sideways
3½	1-1	3 x 2	6	60	Stalks face sideways

Special Note.—Shorter types of Bosc Pears predominate in some districts more than in others. One of the packs shown will accommodate them. The packer will readily understand that sizes ranging around 2½ to 3 inch in diameter are difficult to pack satisfactorily. (Unfortunately a multiple layer container has not yet been devised to enhance the presentation of all sizes of fruit.) The packs shown for these difficult sizes are recommended for adoption after careful consideration of faults of a number of inferior packs which have been eliminated.

PACKING CHART FOR PEACHES IN THE AUSTRALIAN LONG BUSHEL CASE.

Specially Recommended for the Sydney Markets.
26 inches long, 6 inches wide, 14½ inches deep clear of the division, inside measurements.

Size.	Pack.	Layer.	Layers.	Total.
2	2-2	5 x 4	9	324
	2-2	4 x 4	9	288
2½	2-1	5 x 5	8	240
	2-1	5 x 4	8	216
2½	2-1	4 x 4	8	192
	2-1	4 x 3	8	168
2½	2-1	3 x 3	7	126
3	2-1	3 x 2	7	106
	2-1	3 x 2	6	90
3½	1-1	4 x 3	6	84
3½	1-1	3 x 3	6	72
	1-1	3 x 2	6	60



The Californian Orange Case, showing bulge.

PACKING ORANGES, LEMONS & GRAPEFRUIT

CHART FOR PACKING LEMONS IN THE AUSTRALIAN DUMP CASE.

Inside Measurements, 18in. long, 8-2/3in. wide, 14½in. deep.
Lemons for Interstate Trade.

If the following market requirements are adhered to, many disappointments may be avoided:

1. Do not send Lemons from Victoria to an interstate market unless each Lemon is wrapped in sulphite tissue wrapping paper.
2. Do not send Lemons larger than the 140 count (2½ inches), or smaller than the 248 count (2 inches).

3. Make sure the counts are accurate before branding the cases.

4. Large, rough or corrugated Lemons are not wanted in interstate markets.

5. All cases for the interstate trade should be wire-tied to prevent loss and breakages during transport.

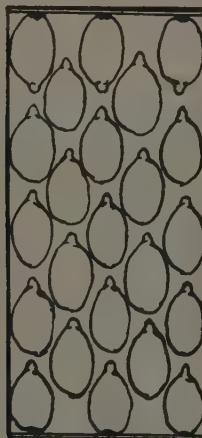
6. The best time to consign Lemons to Queensland is from the middle of October until March.

Note.—The last Lemons in each layer should be reversed in order that the button and not the point is against the end of the case.

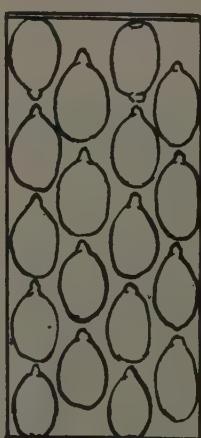
Approximate

Size inches.	Pack.	Layer.	Layers.	Total.	Remarks.
$1\frac{1}{4}$	3-3	6 x 5	10	330	Small
	3-3	5 x 5	9	270	Large
	3-2	6 x 6	9	270	Large
2	3-2	6 x 5	9	248	Small to medium
	3-2	5 x 5	9	225	Medium to large
$2\frac{1}{4}$	3-2	5 x 4	9	203	Small. Pack more loosely than usual
	3-2	4 x 4	9	180	Medium. Pack more loosely than usual
	3-2	5 x 4	8	180	Medium. Pack more tightly than usual
	3-2	4 x 4	8	160	Large
$2\frac{1}{2}$	2-2	6 x 5	7	154	Small
	2-2	5 x 5	7	140	Medium
	2-2	5 x 4	7	126	Large
$2\frac{3}{4}$	2-2	4 x 4	7	112	Small to medium
	2-2	4 x 3	7	98	Medium to large
3	2-2	3 x 3	7	84	Small to large
	2-2	4 x 3	6	84	Small to large

Special Note.—With small $2\frac{1}{4}$ -inch Lemons the packer is sometimes tempted to bring the 5 x 5 layer with eight layers into use; the fruit will be two low in the case. The fault can be remedied by making the "layer count" 5 x 4, instead of 5 x 5. This procedure permits nine layers in the case (instead of eight) with a total of 208 Lemons, and the fruit will be raised to the correct height.



3-2 Pack.



2-2 Pack.



Lemons packed in the dump case for local market.

NOTE.—The last Lemons in each layer should be reversed in order that the button and not the point is against the end of the case.

CHART FOR PACKING GRAPEFRUIT IN THE
CITRUS CASE (EXPORT).

Inside Measurements, 24 x 11½ x 11½ inches, clear of the
division.

Approximate. Pack. Lay-Lay-Total. Remarks.
Size. er. ers.
Inches.

3½	3-2	3 x 3	5	150	The smallest size for export
3½	3-2	3 x 2	5	126	
3½	2-2	3 x 3	5	120	Styler ends face upwards. Pack more loosely than usual
3½	2-2	4 x 3	4	112	Sometimes small 2½
3½	2-2	3 x 3	4	96	
3½	2-2	3 x 2	4	80	Sometimes small 4-inch
4	2-2	3 x 2	4	80	Styler ends face upwards
4	2-2	2 x 2	5	80	
4½	2-1	3 x 3	4	72	
4½	2-2	2 x 2	4	64	
4½	2-1	3 x 3	3	54	
4½	2-1	3 x 2	3	46	
5	2-1	2 x 2	3	36	
5½	2-1	2 x 1	3	28	

Note.—Where not otherwise indicated, the fruit should be packed on its cheek to ensure efficient height in the case.

It will be noticed that while the counts are in rotation the layer counts are not so. This is caused by the styler ends facing upwards in some of the packs.

The bulge should be 2 inches, or even more above the top of the case at the centre, but not more than about an inch at each end. The bulge is formed by loosening the pack slightly at each end of the bottom layer and "nesting" the fruit a little more deeply than the others in the larger spaces thus formed. The fruit is then gently pressed down at the ends of each layer, but not in the centre.

CHART FOR PACKING GRAPEFRUIT IN THE
AUSTRALIAN DUMP CASE.

Inside Measurement, 18 Inches Long, 8-2/3 Inches Wide,
14½ Inches Deep.

Approximate. Pack. Lay-Lay-Total. Remarks.
Size. er. ers.
Inches.

3	2-2	5 x 4	7	126	Cheeks to side of case like Oranges.
3½	2-2	4 x 4	7	112	Styler end to side of case.
3½	2-2	4 x 4	6	96	Styler end to side of the case.
3½	2-1	6 x 5	5	83	Cheeks to side of case like Oranges.
3½	2-1	5 x 5	5	75	Cheeks to side of the case like Oranges.
3½	2-1	5 x 4	5	68	Styler end to side of the case
3½	2-1	4 x 4	5	60	Styler end to side of the case
4	2-1	4 x 3	5	53	Styler end to side of the case
4½	2-1	3 x 3	5	45	Styler end to side of the case
4½	2-1	3 x 2	5	38	Styler end to side of case. Pack loosely

Note.—In order to maintain the maximum size that will fill the cases properly with each count, it is very important that the fruit in each of the packs are placed according to the manner set out in the "Remarks" column. If this is not adhered to, the Grapefruit will not come to the desired height in the case when the packing is finished.

CHART FOR PACKING ORANGES IN THE
AUSTRALIAN DUMP CASE.

Inside Measurements, 18 inches long, 8-2/3 inches wide,
14½ inches deep.

Count.	Pack.	Layer.	Layers.	Remarks.
248	3-2	6 x 5	9	Smallest possible 2½ inch
225	3-2	5 x 5	9	2½ Pack more loosely than usual
200	3-2	5 x 5	8	Slightly under 2½
182	2-2	7 x 6	7	Slightly over 2½
168	2-2	6 x 6	7	Slightly under 2½
154	2-2	6 x 5	7	2½
140	2-2	5 x 5	7	2½
126	2-2	5 x 4	7	Smallest possible 3 inch
112	2-2	4 x 4	7	3½ Pack more loosely than usual
96	2-2	4 x 4	6	3½ Pack more tightly than usual
84	2-2	4 x 3	6	3½
75	2-1	5 x 5	5	3½
68	2-1	5 x 4	5	3½
60	2-1	4 x 4	5	3½
53	2-1	4 x 3	5	3½

Note.—With a view to the presentation of a good firm pack, the sizes shown are the maximum for each count. Fresh crisp Oranges, or those packed early in the season, will be slightly smaller than those harvested and packed later when the weather is warmer.

CHART FOR PACKING ORANGES IN THE CITRUS
CASE (EXPORT).

24in. x 11½in. x 11½in. inside measurements, clear of the
division.

Approximate Size. Inches.	Pack.	Layer.	Layers.	Total.
2½	3-3	4 x 4	6	288
2½	3-3	4 x 3	6	252
2½	3-3	3 x 3	6	216*
2½	3-2	4 x 4	5	200*
3	3-2	4 x 3	5	176*
3½	3-2	3 x 3	5	150*
3½	3-2	3 x 2	5	126*
3½	2-2	4 x 3	4	112
3½	2-2	3 x 3	4	96
3½	2-2	3 x 2	4	80
3½	2-1	3 x 3	4	72

*Indicates the best selling sizes or counts to pack for export.

Hints for the Packer.

Correct Height.—The height is regulated by the size of the "pockets" or spaces between the fruit. Tighten or loosen the pack to obtain this objective.

The Bulge.—Level layers are the cause of damaged Oranges in the lidding operation. The bulge is formed by loosening the pack slightly at each end of the bottom layer and "nesting" the Oranges a little more deeply than the others in the larger spaces thus formed. The fruit is then gently pressed down at the ends of each layer, but not in the centre. The bulge should be 2½ inches or even more

above the top of the case at the centre, but not more than about an inch at each end.

Special Grade.—Blemished fruit is not permitted. The tolerance for human error is as follows:—Not more than $2\frac{1}{2}$ per cent. of the surface of any Orange shall be affected.

Standard Grade.—Not more than 10 per cent. of the surface of any Orange shall be affected.

Plain Grade.—Not more than 25 per cent. of the surface of any Orange shall be affected.

Sweating.—Oranges must be sweated for a period of at least seven days.

Branding Abbreviations.

Variety.	Abbreviation.
Washington Navel	W. Navel
Thompson's Navel	T. Navel
Valencia Late	Val.
Mediterranean Sweet	Med. Sweet
Seedling	Sdlg.

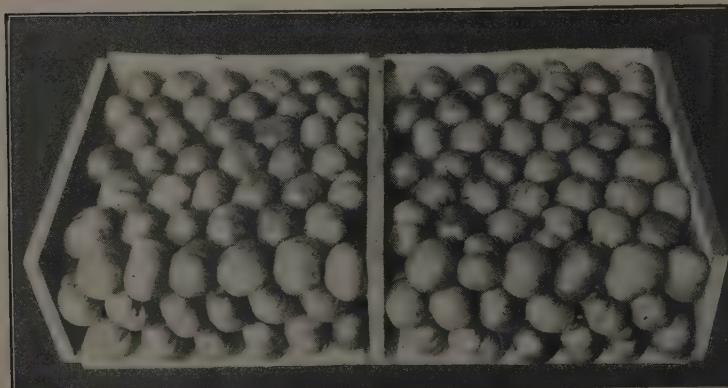
Note.—With a view to the presentation of a good firm pack, the sizes shown are the maximum for each count. Fresh, crisp Oranges, or those packed early in the season, will be slightly smaller than those harvested and packed later when the weather is warmer.

Chart for Packing Tomatoes in the Long Bushel, Half Dump, and Standard Fruit Cases

CHART FOR TOMATOES IN THE LONG BUSHEL CASE.

26 Inches x 6 Inches x 14½ Inches, Inside Measurements Clear of the Division.

Approximate Size inches.	Pack.	Layer.	Layers.	Total.	Remarks.
	2—1	7 x 7	7	294	Angle pack
$2\frac{1}{4}$	2—1	7 x 6	7	274	Angle—small to medium $2\frac{1}{2}$ inches
	2—1	6 x 6	7	252	Angle—medium to large $2\frac{1}{4}$ inches
$2\frac{1}{2}$	2—1	6 x 5	7	232	Angle—average $2\frac{1}{2}$ inches
$2\frac{3}{4}$	2—1	5 x 5	6	180	Angle—small to medium $2\frac{3}{4}$ inches
	2—1	5 x 4	6	162	Angle—medium to large $2\frac{3}{4}$ inches
3	2—1	4 x 4	6	144	Angle—average 3 inches. Pack more loosely than usual. Reverse the first two Tomatoes
$3\frac{1}{4}$	1—1	5 x 5	6	120	Angle—average $3\frac{1}{4}$ inches. Pack more loosely than usual
$3\frac{1}{2}$	1—1	6 x 5	5	110	Angle—small to medium $3\frac{1}{2}$ inches
	1—1	5 x 5	5	100	Angle—medium to large $3\frac{1}{2}$ inches
$3\frac{3}{4}$	2—1	3 x 3	5	90	Styler to size—average $3\frac{3}{4}$ inches



Tomatoes packed in the Long Bushel Case.

$2\frac{1}{2}$ -inch, 2-1 pack, 6 x 6 layers,
252 total.

CHART FOR TOMATOES IN THE HALF STANDARD CASE.

Inside Measurements, 18 Inches Long, $5\frac{1}{2}$ Inches Wide, $11\frac{1}{2}$ Inches Deep.

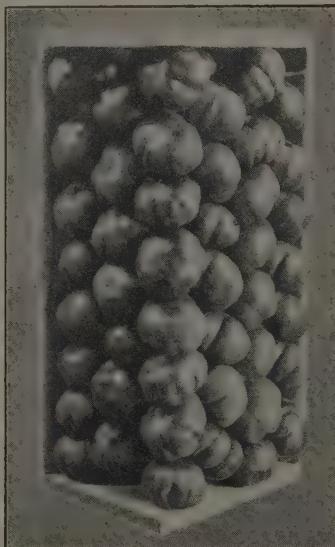
Approximate Size inches.	Pack.	Layer.	Layers.	Total.	Remarks.
$2\frac{1}{4}$	2-1	9 x 9	7	189	Pack more loosely than usual
	2-1	9 x 8	6	153	Pack more tightly than usual
$2\frac{1}{2}$	2-1	8 x 8	6	144	Normal pack
	2-1	8 x 7	6	135	Normal pack
	2-1	7 x 7	6	126	Normal pack
	2-1	7 x 6	6	117	Pack more loosely than usual
$2\frac{3}{4}$	2-1	6 x 6	6	108	Five layers if globe shaped
	2-1	7 x 6	5	98	Stylar ends face sides of case (pack tightly)
	2-1	6 x 6	5	90	Stylar ends face sides of case (pack tightly)
3 and over	2-1	6 x 5	5	83	Stylar ends face sides of case (pack tightly)
	1-1	8 x 8	5	80	Pack more tightly than usual
	1-1	8 x 7	4	60	Five layers if globe shaped
	1-1	7 x 7	4	56	Five layers if globe shaped
	1-1	7 x 6	4	52	Five layers if globe shaped
	1-1	6 x 6	4	48	Five layers if globe shaped

Branding.—Brand initials, surname, and address, or registered brand of the producer, also quality and size of the Tomatoes, such as:—T. JONES, ECHUCA. SEMI-RIPE, 3 INCHES AND OVER.

Melbourne Markets.—Any stage of maturity from the "PINKING" STAGE UNTIL THREE PARTS COLORED. The former should be branded as SEMI-RIPE and the latter branded as RIPE. Tomatoes that are fully colored when harvested seldom give satisfaction to the buyer unless grown within reasonable proximity of the market.

Interstate Markets.—Any stage after the green color has changed to a whitish tint, and THE PULP IS DEFINITELY SUFFUSED WITH PINK until the EARLY PINKING STAGE. The former should be branded as SEMI-RIPE and the latter branded as RIPE. GREEN TOMATOES ARE USELESS ON THE MARKET; they are only fit for pickles.

Tomatoes packed in Half Dump Case.
 $2\frac{3}{4}$ -inch (average), 2-2 pack, 8 x 7 layer, 3 layers, 90 total.



Consign Your Fruit to . . .
FRANK BOOTH & SONS
PTY. LTD.

WHOLESALE FRUIT MERCHANTS
NO. 16, WHOLESALE FRUIT MARKET,
MELBOURNE.

Established Over 20 Years.

Each and every consignment is sold under the personal supervision of the principals and account sales and returns forwarded promptly.

Accredited Selling Agents for V.C.C.A. and
M.C.G.C. Assoc., C.O.D. of Q'land, and the
S.A. Tomato and Celery Growers' Association.

Postal Address: Box 4065,
G.P.O., Melbourne

PHONE:
F 3933.

Fruit Growers

WE STOCK all orchardists requirements in Fertilizers, Sprays, Spreaders, Green Manure Seeds. Also Vegetable Seeds of all kinds. Berry Buckets and Funnets.

Poultry and Stock Foods always available at the Early Market.

E. T. MOULDEN & SON Pty. Ltd.

**Reg. Office: 294-298 Victoria St.,
North Melbourne**

Opposite Victoria Markets.

'Phone: F 1114 & F 1115

F. CHILTON



ESTABLISHED 1894

Fruit Commission Agent

Licensed under Farm Produce Agents Act.

Highest Market Prices**Prompt Returns****Reliable Advice**Registered Address for Telegrams and Cables,
"CHILTON'S"References:—Bank of N.S.W., Haymarket, Sydney;
and Growers throughout Australia.

City Fruit Markets Sydney

'Phone :
M 6638-9

Distributor of BRITNICO NICOTINE SULPHATE.

SHIPPING NO.
56

BEST
WISHES
... for ...
1940
TO ALL



Growers!

If at any time you require an Agent in Sydney or
are considering a change of Agents, or intend
dividing your Sydney consignments*Consign to . . .*

JOHN JENKINS

City Market, SydneyWho have maintained a position of trust since 1847 and
have been proven sound and efficient.May we have the opportunity of adding you to our number
of satisfied growers who are happy to recommend us. —

SUFFICIENT ADDRESS—

JOHN JENKINS, Fruit Markets . . . SYDNEY

TOMATO PACKING—(Continued).

CHART FOR HALF DUMP CASES MADE ON THE WIDE SYSTEM.

Inside measurements, 18 inches long, 8-2/3 inches wide, 7 $\frac{1}{2}$ inches deep.

Approximate Size inches.	Pack.	Layer.	Layers.	Total.
2 $\frac{1}{2}$	3-2	9 x 9	4	180
	3-2	9 x 8	4	170
	3-2	8 x 8	4	160
	3-2	8 x 7	4	150
	3-2	7 x 7	4	140
	2-2	9 x 9	4	144
2 $\frac{1}{2}$	3-2	7 x 6	4	130
	2-2	9 x 8	4	136
	3-2	6 x 6	4	120
	2-2	8 x 7	4	120
	2-2	8 x 8	4	128
	2-2	7 x 7	4	112
	2-2	7 x 6	4	104
	2-2	6 x 6	4	96
3	2-2	8 x 8	3	96
	2-2	8 x 7	3	90
	2-2	7 x 7	3	84
	2-2	7 x 6	3	78
	2-1	9 x 8	3	77
3 $\frac{1}{2}$	2-2	6 x 6	3	72
	2-1	8 x 8	3	72
	2-1	8 x 7	3	68
	2-1	7 x 7	3	63

Counts numbers 144, 136, 128, 96 and 77 are flat shaped varieties.

Counts numbers 130, 136, 120, 112, 104, 96 and 63 should be packed more loosely than other counts shown in above tables.

CHART FOR HALF DUMP CASE MADE ON THE NARROW SYSTEM.

Inside Measurements, 18 inches long, 7 $\frac{1}{2}$ inches wide, 8-2/3 inches deep.

Approximate Size inches.	Pack.	Layer.	Layers.	Total.
2 $\frac{1}{2}$	3-2	7 x 6	6	195
	2-2	9 x 9	5	180
	2-2	9 x 8	5	170
	2-2	8 x 8	5	160
	2-2	8 x 7	5	150
	2-2	7 x 7	5	140
2 $\frac{1}{2}$	2-2	7 x 6	5	130
	2-2	6 x 6	5	120
	2-2	6 x 5	5	110
	2-1	9 x 8	4	102
	2-1	8 x 8	4	96
	2-1	8 x 7	4	90
3	2-1	7 x 7	4	84
	2-1	7 x 6	4	78
	2-1	6 x 6	4	72
	2-1	6 x 5	4	66
	2-1	5 x 5	4	60
	2-1	6 x 5	3	50

Counts numbers 195, 130, 120, 110, 66 and 60 should be packed more loosely than other counts.

Count number 102, pack more tightly than usual.

CHARTS FOR PACKING PASSION FRUIT IN THE LONG BUSHEL, HALF LONG BUSHEL, HALF DUMP, AND HALF STANDARD FRUIT CASES.

Long Bushel Case (26 inches x 6 inches x 14 $\frac{1}{4}$ inches).

Pack.	Layer.	Layers.	Total.	Remarks.
3-2	5 x 5	12	600 or 50 doz.	
2-2	7 x 6	10	520 or 43 doz. and 4	
2-2	6 x 6	10	480 or 40 doz.	
2-2	6 x 5	10	440 or 36 doz. and 8	
2-2	5 x 5	10	400 or 33 doz. and 4	
2-2	5 x 4	10	360 or 30 doz.	
2-2	4 x 4	10	320 or 26 doz. and 8	
2-1	6 x 6	8	288 or 24 doz.	Stalks to centre
2-1	6 x 5	8	264 or 22 doz.	Stalks to centre

Half Long Bushel Case (26 inches x 6 inches x 7 $\frac{1}{2}$ inches).

Pack.	Layer.	Layers.	Total.	Remarks.
3-2	5 x 5	6	300 or 25 doz.	
2-2	7 x 6	5	260 or 21 doz. and 8	
2-2	6 x 6	5	240 or 20 doz.	
2-2	6 x 5	5	220 or 18 doz. and 4	
2-2	5 x 5	5	200 or 16 doz. and 8	
2-2	5 x 4	5	180 or 15 doz.	
2-2	4 x 4	5	160 or 13 doz. and 4	
2-1	6 x 6	4	144 or 12 doz.	Stalks to centre
2-1	6 x 5	4	132 or 11 doz.	Stalks to centre

Half Dump Bushel Case (18 inches x 8-2/3 inches x 7 $\frac{1}{2}$ inches).

Pack.	Layer.	Layers.	Total.	Remarks.
3-3	9 x 8	5	255 or 21 doz. and 3	
3-3	8 x 8	5	240 or 20 doz.	
3-3	8 x 7	5	225 or 18 doz. and 9	
3-3	7 x 7	5	210 or 17 doz. and 6	
3-3	7 x 6	5	195 or 16 doz. and 3	
3-3	6 x 6	5	180 or 15 doz.	
3-3	6 x 5	5	165 or 13 doz. and 9	
3-2	7 x 7	4	140 or 11 doz. and 8	

Half Standard Case (18 inches x 11 $\frac{1}{4}$ inches x 5 $\frac{1}{2}$ inches).

Pack.	Layer.	Layers.	Total.	Remarks.
2-2	7 x 7	9	252 or 21 doz.	Normal pack
2-1	10 x 10	8	240 or 20 doz.	Stalks to centre, 1 $\frac{1}{2}$ inches
2-1	10 x 9	8	228 or 19 doz.	Stalks to centre, 1 $\frac{1}{2}$ inches
2-1	9 x 9	8	216 or 18 doz.	Stalks to centre, 1 $\frac{1}{2}$ inches
2-1	9 x 8	8	204 or 17 doz.	Stalks to centre, 1 $\frac{1}{2}$ inches
2-1	8 x 8	8	192 or 16 doz.	Stalks to centre, 1 $\frac{1}{2}$ inches
2-1	8 x 7	8	180 or 15 doz.	Stalks to centre, 1 $\frac{1}{2}$ inches

W. Musgrove and Son

Established
Forty Years

LICENSED FARM PRODUCE AGENTS
8, City Fruit Market, Sydney

REFERENCE:
BANK OF NEW SOUTH WALES, HAYMARKET

OUR MOTTO:
QUICK SALES AND PROMPT SETTLEMENTS.

**You Will Be Satisfied
By Giving Us a Trial**

Forwarding Numbers

TASMANIA, VICTORIA, SOUTH AUSTRALIA
No. 53

QUEENSLAND, NORTHERN RIVERS
No. 18

Telephone :
MA 3846

Read & Advertise

... in the ...

FRUIT WORLD and **Market Grower**

—oo—

Australia's Oldest Established
Fruit Journal

PUBLISHED MONTHLY

Annual Subscription . . . 6/-
Including 'Annual' . . . 7/6

—oo—

Sample Copy on Request to the
Publishers . . .

Box 1944, G.P.O., Melbourne
or
439 Kent Street, Sydney

**Better Cases
and
More per day
with**

TITAN NAILS

Your case-making costs can be reduced by the use of "Titan" Processed Nails. Specially designed and expertly made, they have heads concentric with the shank and centred points, ensuring uninterrupted operation in case-making machines.

As an example of the savings which can be effected by using "Titan" Processed Nails, we give the following authoritative figures:-

The holding power of $1\frac{1}{2} \times 14$ Polished Nails is 42 lbs. with 1 cwt. of these making 1,578 cases.
The holding power of $1\frac{1}{2} \times 15$ "Titan" Processed Nails is 48 lbs. with 1 cwt. making 2,453 cases.

Which is equivalent to a saving of £5/13/- per ton of Nails, to which must be added the saving in freight, etc., on the basis of 13 cwts. to the ton.

Where wood has a tendency to split, use "TITAN" Patented Bifurcated Point Nails

The points act as a punch and drive a hole through the fibres instead of wedging them apart. Fifty years' nail-making experience lies behind every "Titan" product.

To be genuine, cases must bear the "TITAN" Brand and Registered Number 16,333/28. Demand "TITAN" Products from your supplier, and if not stocked, apply direct to—

. . . The . . .
TITAN NAIL & WIRE
Pty. Ltd.

**Lorimer St., Sth. Melb., S.C.5
Victoria**

Imports and Exports of Fruit and Vegetables in the Various States

NEW SOUTH WALES.

Statistical information is to hand from the State Marketing Bureau, N.S.W. Department of Agriculture, giving—

- (a) Imports of fruit and vegetables into N.S.W. from the other States.
- (b) Exports of fruit and Potatoes from N.S.W. to the other States.

(A) Return of Fruit and Vegetables Imported into New South Wales by Land and by Sea Year Ended June 30, 1939.

State.	Fruit.				Total Packages.
	Pineapples. Tropical Cases.	Bananas. Tropical Cases.	Other Fruit. Cases.	Tomatoes.* Half- Cases.	
Queensland	291,104	177,916	219,343†	697,493 . .	1,385,856
Victoria	326	2,381	347,615	158,281 . .	508,603
Tasmania	—	—	1,410,591‡	10,642 . .	1,421,233
South Australia	—	—	46,707	80 . .	46,787
West Australia	—	—	29,589	13,484 . .	43,073
Total	291,430	180,297	2,053,845	879,980 . .	3,405,552

*Note: Tomatoes arriving from other States with the exception of Victoria, are mostly in half-bushel cases. In order that a uniform unit might be quoted, Victorian arrivals have been converted to the basis of estimated half bushel cases.

†In addition, 37,707 trays of Strawberries were received.

‡In addition, 97 trays of fruit (not specified) were received.

Vegetables (Imports.)

State.	Vegetables (Imports.)								Total. Tons.
	Potatoes. Bags.	Onions. Bags.	Swedes. Bags.	Pumpkins. Bags.	Chillies. Cases.	Cucs. and Other Vegs. Pkgs. Tons.	Packages.		
Queensland	38,413	25,718	53	185,880	1,363‡	33,420	92,790* 45‡	376,274	1,409
Victoria	177,776	133,673	4,112	925	11‡	16	63,733‡ 15‡	380,235	271
Tasmania	949,529	74	56,154	68	—	—	43,032 —	1,048,852	—
South Australia	9,310	8,157	—	26	—	—	96,558 —	114,051	—
West Australia	47,418	3,494	30	928	—	—	204 —	52,074	—
Total	1,222,446	171,116	60,349	187,822	1,374‡	33,436	296,317 61‡	1,971,486	1,436‡

Note: *In addition, 322 crates of Melons received. †In addition, 29 crates of Melons received.

(B) Exports of Fresh Fruit and Potatoes to other States from New South Wales, Year ended June 30, 1939.

State Exported to.	Pineapples (tropical cases).	Bananas (tropical cases).	All Other Fresh Fruit (cases).	Tomatoes (half cases).	Potatoes (bags).
Queensland	—	—	849,604	3,797	40,651
Victoria	780	420,907	111,542	3,783	—
Tasmania	5,106	29,155	14,765	907	48
S. Aust.	—	157,634	5,707	145	—
W. Aust.	—	—	376	—	—

Compiled from State Marketing Bureau Records.

ORCHID BEGINNERS

My Special Offer of six assorted Orchids, including one extra, free, for 25/-, is a genuine offer to beginners, of showy and hardy varieties. The plants are all correctly potted. Freight to Victoria and Queensland 6/-. HYBRID CYMBIDIUMS in every range of color—good plants in excellent condition 25/- & 30/-

Do not fail to secure a copy of my latest fully illustrated catalogue

This Book comprises 72 pages and 50 photographs of Orchids, with all Cultural Directions. (Please add 3d. postage.)

JOHN BISSET

Nursery at 48 Wareemba St., Abbotsford (Sydney)

Open for inspection at any time, Sundays excepted.

Telephone: Drummoyne 1124

Private: JA 8906 (after hours)

GREETINGS . . .

From the

N.S.W. Chamber of Fruit and Vegetable Industries



C. R. WALKER,
Senior Vice-President.



W. MUSGROVE,
President.



P. S. MACDERMOTT,
Secretary.

Goodwill Message

The Editor, "Fruit World Annual,"
Box 1944, G.P.O., Melbourne, Vic.

Dear Sir,

It is with pleasure that I extend to you Sir, and your good readers, the best wishes for a Happy Christmas and a Prosperous Season to follow.

While there are Wars and rumours of Wars and the consequent dislocation of trade, there must naturally be some anxiety as to the future, but when our cause is just and worth fighting for we make sacrifices ungrudgingly. Let us hope for a just and speedy ending.

Our Chamber has pleasure in reporting further good progress during the year.

The Royal Commissioner's Report approving the objects and aims of the Chamber has been gratifying to us, and must be a source of satisfaction to those doing business with our members.

As time progresses we realize more and more the wisdom of the Chamber's founder in taking the broad vision of this great Industry recognising that every Section is related to the whole and making the main objective of the Chamber, the giving of Service and constructive help wherever needed.

My Colleagues join me in wishing you all an abundant share of the "Silver lining" during 1940.

Yours faithfully, W. MUSGROVE, President.

Members of the Chamber

FRUIT SECTION

Associated Growers'
Selling Agency.
Boot & Carter.
W. Bromley.
P. Brooks.
J. W. Bryant.
L. J. Bryant.
H. Black & Son.
Roy Cave.
A. J. Cooper Pty. Ltd.
P. W. Chew & Co.
Committee of Direction
of Fruit Marketing.
Fred Chilton
E. C. Dudson.
C. Gibbs & Son.
H. J. Greentree.
J. Hawke.

Hay Bros.
Hie Lee & Co.
Hop-Lee & Co.
Hopkins & Lipscombe.
J. Holmes Ltd.
F. W. Hill.
L. B. Isaacs & Sons.
John Jenkins.
W. A. Jurd.
C. G. Kellaway & Sons.
F. C. Kennett.
J. W. Kirkwood.
L. T. Locke.
H. C. Lockart.
J. J. Mason.
McKellar & Devlin.
Mitchell & Lawless.
J. Moss & Sons.

W. Musgrove & Son.
A. Mason & Co.
Martin & Co.
N. & A. Fruit and
Produce Pty. Ltd.
E. W. Parker & Son.
F. Picone.
Reedy Bros.
F. H. G. Rogers.
F. J. Salmon & Co. Ltd.
Salter Bros.
Silk Bros.
A. E. Schuster.
J. Slater Pty. Ltd.
W. H. Southcott.
E. T. Stanton.
F. G. Stevens & Sons.
W. J. Sinclair.

A. E. Spurway.
A. Terrey.
Joshua Terrey.
Trathen & Hall.
D. C. Turnbull.
R. Valentine & Sons.
L. L. Vince.
A. H. Walker & Son.
M. Walters & Co.
Ward & Felton.
Watkins & Evans.
Herbert Wilson.
Wing On & Co. Ltd.
Wing Sang & Co. Ltd.
H. P. Woodward.
A. Waddell.
Yocksui Bros.

VEGETABLE SECTION

B. P. B. & Co.
Boot & Carter.
P. W. Chew & Co.
Committee of Direction
of Fruit Marketing.
H. M. Clark.
J. Clayton & Son.
Clarke & Son.
Comino Bros.
C. J. Carroll.
R. G. Clarke.
Clements & Kemp.

E. Cooke.
C. Cooper.
W. J. Curtis.
Dening Bros.
F. G. Dickson.
Dunston & Norris.
E. Evans.
G. Gray.
S. & M. Greenberg.
C. C. Greentree & Son.
J. Hawke.
A. Leedow.

Messent & Gould.
Mitchell & Galvin.
T. S. Mitchell.
G. H. Molesworth.
J. Moss & Sons.
E. W. Parker & Son.
S. A. Peters.
W. J. Paul.
Reedy Bros.
S. J. Rhodes.
Salter Bros.
Silk Bros.

E. A. Small.
W. H. Southcott.
F. G. Stevens & Sons.
R. A. Terrill.
Thompson & Smith.
Wing On & Co.
Wing Sang & Co.
Wing Bros.
W. O. Woods.
R. B. Watson.
Yocksui Bros.

Offices: 215a Thomas Street, Haymarket Telephone MA 5050

VICTORIA.

Statement of the Principal Imports of Fresh Fruit, etc., into Victoria from Other States. Year Ended June 30, 1939.

	N.S.W. Pkgs.	Qld. Pkgs.	S. Aus. Pkgs.	Tas. Pkgs.	W.A. Pkgs.	Total. Pkgs.
Apples	—	—	—	36,252	3,131	39,383
Apricots	—	—	8	674	—	682
Bananas	420,795	58,097	—	—	—	478,892
Beans, Dried	15	—	—	4,248	—	4,263
Beans, Green	25,252	31,722	657	220	—	57,851
Beetroot	—	—	1,397	3	—	1,400
Black Currants	—	—	—	1,328	—	1,328
Celery	—	—	88,853	—	—	88,853
Cherries	2,919	—	14,248	20	—	17,187
Citrus	—	—	3,486	3,035	—	6,521
Cucumbers	5,905	11,078	—	—	—	16,983
Dried Fruit	1,973	—	73,622	3,096	2,802	81,493
Grapefruit	215	187	357	—	—	759
Grapes	—	2	775	24	—	801
Kernels	114	2,446	2,963	—	—	5,523
Lemons	7,769	1,458	726	1	150	10,104
Mandarins	39,943	7,901	122	—	—	47,966
Mangoes	10	700	—	—	—	710
Marrows	1,370	2,309	314	4	—	3,997
Onions	—	—	19,073	2	1,988	21,063
Oranges	36,236	—	286,672	—	—	322,908
Papaws	15	7,600	—	—	—	7,615
Passionfruit	7,524	3,091	413	—	365	11,393
Peaches	651	—	2,846	20	—	3,517
Peanuts	—	16,412	—	—	—	16,412
Pears	—	—	4,222	1,776	—	5,998
Peas, Dried	—	—	3,999	10,944	—	14,943
Peas, Green	3,227	254	4,310	6,292	—	10,083
Pineapples	880	13,263	—	—	—	14,143
Plums	217	—	—	834	—	1,041
Pumpkins	—	37,441	1,372	—	1,333	40,146
Strawberries	—	309	—	13	—	322
Sweet Potatoes	2,093	19	—	—	—	2,112
Swedes	—	—	225	49,640	—	49,865
Tomatoes	3,783	2,304	148,238	2,749	135,598	292,672
Vegetables, Unspecified	34	21	8,216	220	26	8,517

EXPORTS OF THE PRINCIPAL FRESH FRUIT, VEGETABLES, ETC., FROM VICTORIA TO OTHER STATES
FOR YEAR ENDED JUNE 30, 1939.

South Australia.

	Pkgs.	Pkgs.
Apples	2,836	Peas
Grapefruit	131	Lettuce
Lemons	136	Cabbages
Oranges	621	Cauliflowers
Pears	385	Pumpkins
Peaches	335	Cucumbers
Tomatoes	393	Potatoes
Beans	77	Onions

Tasmania.

Citrus Fruit, bus.	76,377	Tomatoes, bus.	24,048
Bananas, bus.	25,796	Cucumbers, bus.	1,112
Pineapples, bus.	3,549	Melons and	—
Peaches, bus.	650	Pumpkins, doz.	1,065
Apples, bus.	232	Potatoes, bags	151
Pears, bus.	1,957	Cauliflower and	—
Apricots, bus.	952	Cabbage, doz.	1,682
Plums, bus.	124	Onions, bags	7,587½

Western Australia.

Dried Fruit:—	
Apples, Pears,	Sultanas, lb.
Peaches, etc.,	Raisins, lb.
lb.	42,391
Other, lb.	20,590
lb.	8,432
Prunes, lb.	Onions, cwt.
11,276	18,083
	Potatoes, cwt.
	889

Queensland.

(Particulars not available.)

New South Wales.

Bananas, pkgs.	2,381	Fresh Fruit, pkgs.	347,835
Tomatoes, pkgs.	57,657	Potatoes, pkgs.	178,007
Onions, pkgs.	133,673	Swedes, pkgs.	4,112
Pumpkins, pkgs.	925	Pumpkins (Loose),	—
Other Vegetables	—	tons	11½
(Loose), tons	15½	Pineapples, pkgs.	63,823
		pkgs.	

WITH OVER FIFTY YEARS OF SATISFACTORY SERVICE
TO THE FRUIT INDUSTRY

J. DAVIS PTY. LTD.

Offer Clients the benefit of their extensive experience
in the Buying and Distribution of Fruit

ACCREDITED AGENTS FOR—

Victorian Central Citrus Association Pty. Ltd. Murray Citrus Growers' Co-operative Association Ltd.
South Australian Tomato Growers' Association.

GROWERS ARE INVITED TO SEND THEIR PRODUCTS WHICH WILL BE
ASSURED HIGHEST RULING RATES. YOU ARE PROTECTED BY
FIDELITY BOND LODGED WITH DEPARTMENT OF AGRICULTURE (VIC.)

J. DAVIS PTY. LTD. - No. 8, Wholesale Fruit Market, Melbourne

Shipping Number

Cable Address: "DAVIS," Melbourne.
Codes: "ABC," 4th and 5th Editions.
All Correspondence to Box 148B.

24

Telephone: F 3232.

Bankers: The National Bank of Australasia,
Collins Street, Melbourne.

Telegraphic Address: "Listeria," Melbourne.
Codes: Bentley's A.B.C., 5th Edition.



Postal Address: G.P.O. Box 555D.

Telephone: F 6341.

Private: Windsor 4535.

GEO. LISTER Pty. Ltd.

(Managing Director: J. R. VAIL)

Wholesale Fruit Merchant

Licensed Commission Agents

Importers and Exporters

Selected Agents for all Growers' Organisations throughout the Commonwealth.

**No. 12, Wholesale Fruit Market
Melbourne**

Having carried on a successful business for over half a century, our name stands high in
the Wholesale Fruit Trade of Australia. Our spacious premises at Melbourne Wholesale
Fruit Market are admirably adapted for the conduct of our large business, and growers are
assured that our best efforts are always at their disposal.

Bankers: The Commercial Banking Co. of Sydney, Melbourne Branch.

Queensland Fruit Industry in 1939

Pineapples — Bananas — Papaws — Strawberries —
Citrus — Tomatoes — Apples — Plums — Peaches —
Queensland Nuts — Avocados.

Production and Marketing.

THE PAST YEAR was a reasonably satisfactory one in Queensland for fruit production. Some districts and some branches of the industry, as might be expected in a big State like Queensland, fared better than others.

Information from the Department of Agriculture is as follows:—

Pineapples.

Pineapple production has, as a result of the application of scientific methods of production, been placed upon a sounder basis during the past few years. Whereas the average production for the whole State was 250 cases per acre four years ago, it is now about 500 cases per acre.

Total Production:—1938, 1,331,091 doz.; 1939, 2,308,250 doz.

Bananas.

The Queensland Banana industry is in a fairly prosperous state. Growers' returns have been good practically right throughout the year. This is attributed to decreased production both in Queensland and N.S.W. In Queensland the area eradicated exceeded the area planted by over 1,000 acres. Comparative figures for 1938 and 1939 are as follow:—

Total Production:—1938, 1,517,451 bunches; 1939, 1,570,000 bunches.

Papaws.

During the year 1939, Papaw production was maintained at a satisfactory level. The canneries absorbed 657 tons of fruit, which compares favorably with 598 tons taken by the canneries in 1938. Prices obtained from the canneries were £10/10/- per ton for ripe fruit and £8/10/- per ton for green fruit.

Total Production:—1938, 177,573 doz.; 1939, 191,894 doz.

Strawberries.

There was an exceptionally big crop of Strawberries during the year. Factories absorbed a similar quantity to that in 1938, and the prices realised were 7d. per lb. for canning and 5½d. per lb. for jam-making. The Committee of Direction of Fruit Marketing organised a local distribution scheme direct to householders and the staffs of local business houses in 4 lb. boxes. Several thousand boxes were distributed by this means within a few weeks. Comparative figures for 1938 and 1939 are as under:—

Total Production:—1938, 310,835 qts.; 1939, 363,673 qts.

Citrus.

In the coastal districts, owing to the heavy Winter rains and light Spring rains, a heavy shedding of blossoms occurred which resulted in light crops, while in the inland district which rely on irrigation and underground wells, the usual good crops of quality fruit were produced. Comparative production figures are:—

	1938. Bus.	1939. Bus.
Citrons, Grapefruit and Seville		
Oranges	578	1,548
Lemons	80,466	30,458
Oranges and Mandarins	293,113	348,922
	324,157	380,928

Tomatoes.

In 1939 production was not as heavy as in 1938; some of the loss in production may be attributed to hailstorms in the Redland Bay district. Comparative production figures are as follow:—

Total Production:—1938, 500,486 bus.; 1939, 300,000 bus. (est.).

Deciduous Fruits.

The Stanthorpe district is the main source of production and experienced one of the best seasons for many years. Approximately 20,000 tons of fruit, such as Apples, Plums, Peaches and Apricots, were marketed at satisfactory prices. A total of 27,502 bushels of Apples was shipped to the U.K. and 10,160 bushels to Singapore and other Eastern destinations in comparison with a total export of 35,526 bushels in 1938. Comparative figures for main fruits are:—

	1938. Bushels.	1939. Bushels.
Apples	269,410	282,158
Plums	76,017	60,621
Peaches	90,113	82,370
Apricots	13,912	10,457
Cherries	255	301
Nectarines	3,600	3,899
Pears	26,179	27,596
Quinces	941	780

There have been substantial developments with Queensland nuts and Avocados.

Following the success with Pineapples, research work is particularly advised in production of Apricots, Peaches and Pears, and State Governments are urged to attend to this matter.



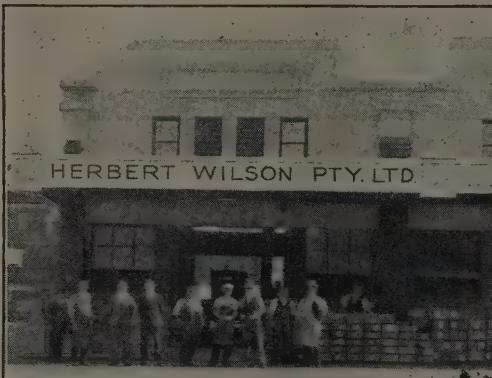
Orchid growing is a fascinating and profitable hobby.

(Illustration by courtesy J. Bisset, Orchid Specialist, Abbotsford, N.S.W.)

Herbert Wilson Pty. Ltd.

Wholesale Fruit Merchant and Growers' Agent

AGENTS for the
Murray Citrus
Growers' Association,
South Australia.
Victorian Central
Citrus Associa-
tion.
South Australian
Tomato Growers'
Association.
South Australian
Celery Growers'
Association.
Geraldton Tomato
Growers' Association,
Western Australia.



SOLE AGENTS for
the well-known
"Olivewood"
Citrus.

Bankers:
National Bank of
Australasia
(Western Branch),
Melbourne.

Growers Protected
by Fidelity Bond.

No. 10, Wholesale Fruit Market, Melbourne

Telephone F 6444

Shipping Number 75

**SHIPPING
NO.**

41

For Reliable Results—Always !

T. STOTT & SONS PTY. LTD.

FRUIT MERCHANTS

Established over 50 Years.

GROWERS
PROTECTED
BY
FIDELITY
BOND.

BRANCHES { Victoria Market, and
36 Wholesale Fruit Market

PROMPT SETTLEMENT.

COUNTRY AND INTERSTATE ORDER TRADE SUPPLIED.
Stencils or Labels sent on Application.

Telegraphic Address: "STOTTONS, MELBOURNE."

Bankers: Bank of Australasia, Collins Street, Melbourne.

ESTABLISHED 1882.

TELEPHONE: F 4370.

SOUTH AUSTRALIA.

Statement of the Principal Imports of Fruit and Vegetables Imported into South Australia for the Year Ending June 30, 1939.

Apples, bus.	2,908	Pineapples, bus.	18,531½
" Custard, bus.. . .	6	Plums, bus.	34
Apricots, bus.	14	Tomatoes, bus.	524½
Bananas, bus.	171,618½	Nuts, bags	7,581
Cherries, bus.	31	Beans, bus.	2,721
Citrus—		Cabbages, bags	213
Grapefruit, bus.. .	131	Carrots, bags	279
Lemons, bus. . . .	136	Cauliflowers, bags. . .	183
Oranges, bus. . . .	626	Cucumbers, bus.	1,342
*Grapes, pkg.	—	Lettuce, bus.	114
Mangoes, bus.	18	Onions, bags	830
Monstera deliciosa, bus.	39½	Parsnips, bags	111
Nectarines, bus. . . .	24	Peas, bags	57
Papaws, bus.	232½	Potatoes, bags	123,585
Passionfruit, bus. . .	2,388½	Pumpkins, bags	414
Peaches, bus.	385	Swedes, bags	1,849
Pears, bus.	386	*Prohibited import.	

PRINCIPAL INTERSTATE EXPORTS OF FRUIT AND VEGETABLES, ETC., FROM SOUTH AUSTRALIA.

Details Supplied by the Respective Departments of Agriculture.

	Fresh Fruit.	Vegs.	Nuts.	Kernels.
	Bushels.	Bags.	Bags.	Bags.
N.S.W.	46,787	114,051	5,191	—
Tasmania	4,336	343	229½	—
Victoria	473,351	128,473	255	2,991
West, Aust.	11,038	3,458	1,797	—
Totals	535,512	246,325	7,472½	2,991

Queensland figures cannot be separated.

WESTERN AUSTRALIA.

In the returns from the W.A. Dept. of Agriculture, showing quantities of fresh fruit brought over from the Eastern States it will be noted that Oranges, Bananas, Cherries and Pineapples, are most in evidence.

Importation of Fresh Fruit Inspected under the Plant Diseases Act for the year ended June 30, 1939.

Kalgoorlie—

Bananas—Crates	2,930
Pineapples—Crates	132
Nuts—Bags	115
Oranges—Cases	6,634
Lemons—Cases	144
Passionfruit—Cases	16½
Tomatoes—Cases	379
Grapefruit—Cases	25
Coconuts—Bag	1
Persimmons—Case	1
Olives—Case	1
Peaches—Cases	279
Plums—Cases	188½

Nectarines—Cases	88½
Cherries—Cases	460
Apricots—Cases	24½
Gooseberries—Cases	10½
Loquats—Cases	1½
Mandarins—Cases	146
Strawberries—Cases	5

Packages	11,582
--------------------	--------

Fremantle—

Bananas—Crates	128
Pineapples—Crates	1,907
Nuts—Bags	8,860
Oranges—Cases	243
Passion Fruit—Cases	10
Grapefruit—Cases	20
Cherries—Cases	2,211½
Gooseberries—Cases	151½

Packages	13,581
--------------------	--------

Albany—

Bananas—Crates	4
Pineapples—Crates	3
Nuts	nil
Oranges—Cases	63
Grapefruit—Cases	3
Coconuts—Bag	1

Packages	73½
--------------------	-----

Carnarvon—

Nil	nil
---------------	-----

TOTAL packages	25,186½
--------------------------	---------

The figures giving quantities and kinds of fruit imported from overseas, states the Department, show there is still room for more home-grown Bananas in the local markets, no less a quantity than 56,877 crates having been imported during the year ended June 30, 1939. Details are as follow:—

Importation of Fresh Fruit Under the Quarantine Act for Year Ended June 30, 1939.

	lbs.
Bananas	4,550,206
Pineapples	377
Mangoes	770
Mangosteens	720
Grapefruit	10,025
Coconuts	162,226
Nuts	65,769

Total	4,790,093
-----------------	-----------

It is estimated that the world production of Apples is over 500,000,000 bushels, Pears 160,000,000 bushels, and Oranges 207,000,000 bushels.

France is the largest producer in the world of Pears—followed by U.S.A. and Germany. French and German production consists mainly of the cider varieties.

G. WOOLF & SONS

PTY. LTD.

Wholesale Fruit Merchants

**29-30 Wholesale Fruit Market
Melbourne, Victoria**

ESTABLISHED OVER 40 YEARS

CONSIGNMENTS OF ALL CLASSES
OF FRUIT SOLICITED.

All Sales conducted under the Personal
:: Supervision of the Principals. ::
**ACCOUNT SALES & CHEQUES FORWARDED
PROMPTLY.**

APPROVED AGENTS FOR—

Murray Citrus Growers' Association (S. Australia).
Victorian Central Citrus Association.
S.A. Tomato Growers' Association.
S.A. Celery Growers' Association.
Committee of Direction of Fruit Marketing (Qld.).
Geraldton and District Tomato Growers' Association
(W.A.).
Northern Districts and Geraldton Tomato Growers'
Association (W.A.).
Banana Growers' Federation of N.S.W.
PHONE: F 5550.

Telegraphic Address:
"WOOLFSON,"
Melbourne.

Postal Address:
Box 4074,
Melbourne.

SPECIAL NOTICE TO FRUITGROWERS

**All Members
under
Fidelity Bond**

In response to numerous requests from growers for information as to who are members of the

Wholesale Fruit Merchants' Association of Victoria

the following list is given. All are members of the above Association, and are registered firms carrying on business in the

WHOLESALE FRUIT MARKET, MELBOURNE.

STAND NUMBERS ARE AS INDICATED IN PARENTHESES.

T. STOTT & SON PTY. LTD. (26-36).
H. L. E. LOVETT & CO. (23).
A. E. PITTS (14).
J. DAVIS PTY. LTD. (8).
W. S. TONG (31).
SILK BROS. PTY. LTD. (24-25).
J. G. MUMFORD (35).
GOLDEN VALLEY FRUIT CO. PTY. LTD.
(15).
J. W. ROSS (13).
H. M. WADE & CO. (21).
DAVID SMITH PTY. LTD. (3).
SILBERT SHARP & DAVIES PTY. LTD.
(17).
WATKINS FRUIT COMPANY PTY. LTD (5)

G. WOOLF & SONS (29-30).
R. CORNISH & SONS (5).
J. HYMAN & SON (51).
HERBERT WILSON PTY. LTD. (10).
FRANK BOOTH & SONS PTY. LTD. (16).
GEO. LISTER PTY. LTD. (12).
TIM YOUNG & CO. PTY. LTD. (18).
F. W. VEAR PTY. LTD. (28).
YEE HOP LOONG & CO. (32).
H. LOUEY PANG & CO. PTY. LTD. (4).
WING YOUNG & CO. (38).
D. MENTIPLAY & CO. PTY. LTD. (27).
PRICE & KING PTY. LTD. (2).
REGAN & KENNY (Successors to Wm.
Sweeney). (33).

Correspondence is invited by the Association.

Office : 21 Wholesale Fruit Market,
Queen Street, Melbourne. Phone: F 4866.

TIM YOUNG & CO.

PTY. LTD.

Wholesale Fruit Merchants

18 Wholesale Fruit Market

Tel., F 4321. Box 28a, G.P.O., Melbourne.

Cable Address: "TIYOUNG." A.B.C. Code, 5th Ed.

Growers can be assured of receiving the
very best service and prompt returns.

Bankers:
E.S. & A. Bank Ltd., 225 Swanston St., Melbourne.

ACCREDITED AGENTS FOR:
VICTORIAN CENTRAL CITRUS ASSOCIATION.
MURRAY CITRUS GROWERS' CO-OP. ASSN.
LTD. (South Australia).

COMMITTEE OF DIRECTION OF FRUIT
MARKETING (Queensland)
and other GROWERS' ASSOCIATIONS.

Consignments Solicited

TASMANIA.

TASMANIA'S chief trade is with overseas and interstate markets, overseas export figures are shown elsewhere. The following interstate trade figures are to hand from the Secretary for Agriculture (Mr. H. C. Smith), Department of Agriculture, Hobart.

Interstate Fruit Shipments—July, 1938-June 30, 1939.

1938.	Hobart.	Pt. Huon.	Cygnet.	Launceston.	D'port.	Burnie.	U'ton.	Cases.	Total.
Month.									
July	114,136	75,023	28,112	3,842	2,231	—	—	..	223,343
August	90,877	57,770	19,553	3,971	314	—	—	..	172,485
September	73,716	59,079	18,713	2,655	900	—	—	..	155,063
October	40,452	21,192	—	3,885	111	—	—	..	65,640
November	31,326	3,225	—	1,358	—	—	—	..	35,909
December	17,870	—	—	—	—	—	—	..	17,870
1939.									
January	2,907	—	—	415	14	—	—	..	3,836
February	25,846	—	—	8,145	1,335	50	—	..	35,376
March	124,547	15,668	6,169	61,408	18,292	512	12	..	226,603
April	173,599	44,926	18,338	48,361	30,331	988	17	..	316,562
May	127,819	94,803	40,982	33,452	21,344	633	22	..	319,055
June	108,344	118,739	41,263	4,698	9,694	137	—	..	282,875
	931,439	490,425	173,131	172,185	84,566	2,320	51	..	1,854,117

Fruits Imported into Tasmania—Financial Year 1938/39.

	N.S.W.	Vic.	Qld.	S.A.	Totals.
Citrus Fruit, bus.	11,888	80,430	52	5,878	98,248
Bananas, bus.	29,155	26,224	225	—	55,604
Pineapples, bus.	5,111	3,493	505	—	9,109
Peaches, bus.	7	650	—	388	995
Apples, bus.	1	225	—	—	226
Pears, bus.	—	1,895	—	—	1,895
Apricots, bus.	68	952	—	—	1,020
Plums, bus.	87	124	—	—	211
Cherries, bus.	279	1,485	—	—	1,764
Passionfruit, bus.	649	846	—	—	1,495
Grapes	1,510	9,080	—	—	10,590
Fruits, other than specified, bus.	245	425	—	30	700
Nuts, cwt.	182	545	25	229	981
Tomatoes, bus.	907	23,790	43	45	24,785
Cucumbers, bus.	1,976	1,140	10	—	3,126
Melons and Pumpkins, doz.	3,066	1,265	1,511	—	5,842
Potatoes, bags	48	145	—	—	193
Cauliflower and Cabbage, cwt.	—	1,824	—	—	1,824
Onions, bags	142	8,599	55	317	9,113
Vegetables, other than specified, cwt.	523	4,508	37	51	5,119

A. E. PITTS
 Member of Wholesale Fruit Merchants' Association of Victoria.
 Accredited Agent for Growers' Organisations in All States.

**14 WHOLESALE FRUIT MARKET,
MELBOURNE.**

Consignments Solicited from all States.

SHIPPING NO.

37

Established 1893.
 Phone: F 5035. Residence Telephone: MX 1711.
**PEA AND BEAN STANDS 13 & 14,
VICTORIA MARKET.**

Growers Will Receive Top Market Value and Prompt Returns.

Fidelity Bond Guarantee for £1,000.
 Reference—E.S. & A. Bank, Elizabeth St. Branch, Melbourne.

THE VICTORIA MARKET, MELBOURNE.

PARTICULARS are given herunder of the quantities of fruit and vegetables sold in the growers' section of the Victoria Market, Melbourne, for the year ended August, 1948. These details are supplied by courtesy of the Department of Agriculture.

N.B.—Actual quantities were recorded by Fruit Inspectors during one week in each month, from which the monthly totals were averaged.

Mr. J. McNamara, manager of the Melbourne branch of the P.D.S. Fruit Section is, like many P.D.S. executive men, a product of the dairy industry, his early commercial training having been gained in the local butter

factory at Grafton, one of the leading dairying districts on the north coast of N.S.W.

Mr. McNamara served abroad throughout the Great War and following his return was appointed to a position of trust in the Fruit Section in Sydney. His satisfactory service there resulted in his promotion in 1925 to the management of the Melbourne branch. This position afforded Mr. McNamara full scope for his executive capacity and business ability, and the branch, which has prospered exceedingly under his control, is regarded among

a wide circle of supporters in Victoria, N.S.W. and South Australia, as one of the soundest and most efficient fruit distributing agencies in the Melbourne markets.

Mr. McNamara served abroad throughout the Great War and following his return was appointed to a position of trust in the Fruit Section in Sydney. His satisfactory service there resulted in his promotion in 1925 to the management of the Melbourne branch. This position afforded Mr. McNamara full scope for his executive capacity and business ability, and the branch, which has prospered exceedingly under his control, is regarded among a wide circle of supporters in Victoria, N.S.W. and South Australia, as one of the soundest and most efficient fruit distributing agencies in the Melbourne markets.

The branch also annually exports substantial quantities of Apples and Pears to the United Kingdom. This business includes c.i.f. as well as consignment sales, and the Society's London interests are capably handled by the Overseas Farmers' Co-op. Federations Ltd.

**Quantity of Vegetables Sold in Queen Victoria Market
(all Sections), September, 1937, to August, 1938**

(inclusive).

Variety.	Quantity.
Peas	376,948 bags, each 48 pounds
French Beans	255,649 bags, each 48 pounds
Broad Beans	4,428 bags, each 48 pounds
Pumpkins	41,990 bags
Swedes	10,192 bags
Sprouts	97,630 dozen pounds
White Onions	236,938 dozen bunches
White Onions	65,743 cases
Swedes	66,664 dozen bunches
Pumpkins	116,415 dozen
Marrows	
White Turnips	114,915 dozen bunches
Parsnips	504,790 dozen bunches
Rhubarb	248,430 dozen bunches
Cabbages	483,123 dozen
Beetroot	1,047,813 dozen bunches
Cauliflowers	584,905 dozen
Carrots	715,043 dozen bunches
Celery	317,629 dozen bunches
Lettuce	584,702 cases

Summary:—637,026 bags, 650,445 cases, 97,630 dozen pounds, 1,184,443 dozen, 3,250,212 dozen bunches.



Fruitgrowers' Associations Throughout Australia

THE AUSTRALIAN APPLE AND PEAR BOARD.

Chairman—J. B. Mills, 528 Collins-street, Melbourne. Secretary—H. A. Baker, 528 Collins-street, Melbourne.

State Members:

Victoria: J. B. Mills, W. P. Hutchinson, W. Young.

Western Australia: H. W. Soothill, R. M. Carter, G. Parke.

South Australia: P. R. B. Searcy, M. J. Vickers.

Tasmania: W. H. Calvert, L. Taylor, D. Ryan, T. Burnaby.

New South Wales: H. V. Smith, R. D. Westmore.

Queensland: B. Flewell Smith. **Government Nominee:** R. D. Westmore.

State Committees:

New South Wales: (Chairman) Mr. C. G. Savage, (Deputy Chairman) Mr. H. V. Smith, (Members) Messrs. E. E. Herrod, J. Holmes, L. J. Jenkins.

Victoria: (Chairman) Mr. J. B. Mills, (Deputy Chairman) Mr. W. P. Hutchinson, (Members) Messrs. A. S. McK. Harrison, H. M. Wade, J. M. Ward, W. Young.

Queensland: (Chairman) Mr. B. Flewell-Smith, (Deputy Chairman) Y. F. Jesser, (Members) Messrs. J. C. Arkell, H. S. Hunter, A. Martin, E. L. Donaldson.

South Australia: (Chairman) Mr. G. A. W. Pope, (Deputy Chairman) Mr. P. R. B. Searcy, (Members) Messrs. L. J. Bishop, H. N. Wicks, M. J. Vickers.

Western Australia: (Chairman) Mr. F. W. Lantzke, (Deputy Chairman) Mr. H. W. Soothill, (Members) Messrs. B. Mercer, H. R. Powell, R. M. Carter, Geo. Parke.

Tasmania: (Chairman) Mr. L. S. Taylor, (Deputy Chairman) Mr. D. E. Ryan, (Members) Messrs. T. J. McKinley, J. H. Astell, R. W. Humphreys, T. Burnaby, The Hon. W. H. F. Calvert, M.L.C.

THE AUSTRALIAN APPLE AND PEAR COUNCIL.

President, J. B. Mills, 528 Collins-street, Melbourne; Vice-President, D. E. Ryan, Franklin, Tasmania; Deputy Vice-President, F. Moore, Blackburn, Victoria; Secretary, R. E. Boardman, A.F.I.A., F.A.I.S., 528 Collins-street, Melbourne.

Affiliated Associations—

Tasmania: Tas. State Fruit Board, Tas. Fruit Shippers' Committee.

N. Tas. Fruit Shippers' Committee.

Victoria: Victorian Fruit Marketing Association.

S. Australia: S. Aust. Fruit Marketing Association.

W. Australia: W.A. Fruitgrowers' Association, W.A. Fruit Shippers' Committee.

New South Wales: N.S.W. Apple and Pear Export Association.

Queensland: Committee of Direction of Fruit Marketing.

Australian Dried Fruits Association: Sec., W. N. Sumner, 46 Queen Street, Melbourne..

Dried Fruits Export Control Board: Sec., R. A. Marx, 100 Queen-street, Melbourne.

Canned Fruit Export Control Board: Sec., W. J. Adams, A.M.P. Buildings, 419 Collins-street, Melbourne.

Australian Canning Fruitgrowers Association: Sec., W. J. Young, Ardmona.

Fruit Industry Sugar Concession Committee: Sec., W. J. Adams, 419 Collins-street, Melbourne.

Federal Citrus Council: Sec., A. W. Schwennesen, G. Kitchin-Kerr, Market Manager, Temple Court, Collins-street, Melbourne.

NEW SOUTH WALES.

Fruitgrowers' Federation of N.S.W.: Secretary, E. E. Herrod, 11 Bligh-street, Sydney.

List of Affiliated Organisations, Together with Names and Addresses of Secretaries.

Arcadia: E. L. Alexander, Arcadia, via Galston.

Annangrove: A. C. Birch, Annangrove, via Rouse Hill.

Arding: J. H. Yeomans, Arding, via Uralla.

Armidale and Dist.: W. Gantle "Dangarsleigh," Armidale.

Aylmerton (A.B.C.): J. A. Rutcliffe, Alpine.

Banana Growers' Fed. Co-op. Ltd.: A. Buckley, Box 31, Murwillumbah.

Bathurst: E. Ray, Caves, Roadside Mail, Bathurst.

Batlow: Agric. Bureau, P. E. Cook, Batlow.

Batlow Packing House Co-op. Ltd.: Batlow.

Berrima and Dist.: H. Richardson, Moss Vale.

Binalong: W. Arthur, Binalong.

Brady's Gully: J. D. Kirkness, Brady's Gully, via Gosford.

Bungunyah and Koraleigh: O. M. Ward, Koraleigh P.O. (N.S.W.), via Nah (Victoria).

Buninyong: C. J. Rowcliff, Old Dubbo-road, Dubbo.

Camden: G. V. Sidman, Camden.

Central Nth. Coast Tomato, Fruit and Veg. Co-op. Soc. Ltd.: A. G. Henderson, Valla.

Cessnock and Dist.: R. McNamara, Mt. View, via Cessnock.

Coff's Harbor: V. E. Allen, "Korora," Coff's Harbor.

Coomealla: C. Aubrey Calf, Darton.

Cordeaux: F. A. March, Cordeaux River, Kambla Heights.

Crookwell: A. G. McDonald, Crookwell.

Curlwaa: The Sec., Curlwaa Fruit-growers' Progress Association.

Dooralong: S. C. Richards, Dooralong, via Wyong.

Dural: M. Fisher, "San Remo," Dural.

East Kurrajong: E. Case, Kurrajong.

Elderslie: A. F. Pankhurst, Elderslie, Branxton.

Exeter: P. C. Allen, Sutton Forrest.

Fairfield and Dist.: G. Lehmann, Water-street, Smithfield.

Freeman's Reach-Glossodia: A. Krahe, Wilberforce.

Glenfield: A. J. Blinman, Glenfield.

Glenorie: W. Jamieson, Glenorie.

Glossodia: R. J. Jenkins, Glossodia, via Windsor.

Gosford Co-op. Citrus Packing House Ltd.: Box 10, Gosford.

Gosford Bulk Loading Rural Co-op. Society Ltd.: Box 37 P.O., Gosford.

Goulburn: H. Broadhead, Goulburn.

Grafton Dist.: B. C. Egging, "Melrose," Kent-street, Grafton.

Gressford: G. N. Doyle, East Gressford.

Griffith Prod. Co-op. Co. Ltd.: Box 476, Griffith.

Grose Vale: J. F. Power, Grose Vale.

Grose Wold: W. J. Nutman, Grose Wold.

Gunning: G. E. Ardill, Gunning.

Holgate: R. Gale, Holgate, via Goscold.

Hawkesbury and Nepean Fed. of Progress Assns.: H. C. Matheson, "Glenara," Grose Wold.

Hunter River and Dist.: L. S. Scobie, Lorn, West Maitland.

Inverell: W. Ayland, Box 218, Inverell.

FRUIT WORLD ANNUAL

Special issue of "The
FRUIT WORLD," January, 1940.

Kellyville: A. Bathgate, Kellyville.
Kenthurst: W. E. Campbell, Kent-
hurst.

Kentucky Rural Co-op. Soc. Ltd.:
Kentucky South.

Kentucky F.G.A.: J. Ballantyne,
Hillcrest, Kentucky South.

Kincumber and Avoca: R. Pickett,
Avoca Beach, via Gosford.

Kingsvale Rural Co-op. Soc. Ltd.:
Box 5, Young.

Kootingal: Mrs. B. M. Sage, Koot-
ingal.

Kulnura: A. A. Anderson, Kulnura,
via Gosford.

Kurrajong: A. F. Vincent, Kurra-
jong.

Leeton Fruitgrowers' Co-op. Soc.
Ltd., Box 244, P.O., Leeton.

Lavington: W. Fisher, Lavington.
Lemongrowers' Association: W. A.

Smith, Box 2, Somersby, via Gosford.

Liverpool and Dist.: A. L. Marshall,
Central-avenue, Chipping Norton.

Lower Portland: H. Lowe, Lower
Portland.

Maidens Brush: R. More, Maidens
Brush, via Gosford.

Mangrove Mt.: R. W. Bennett, Box
8, Mangrove Mt., via Gosford.

Maraylya and Dist.: A. Wimble,
Maraylya.

March Agric. Bureau: N. Griffith,
"Melyra," March, via Orange.

March Fruit Growers' Association:
E. Griffith, March, via Orange.

Mardi: L. T. Bray, Mardi, via
Wyong.

Maroota: G. J. Robinson, Maroota,
via Windsor.

Matcham: Mainuru Rural Co-op. Soc. Ltd.: M.
W. Johns, Box 30, P.O., Young.

Millthorpe: W. W. Moad, "Merlyn,"
Millthorpe.

Mitchell's Flat: W. Dagg, "Sedge-
field," Singleton.

Mt. Hunter: J. Childs, Mt. Hunter,
via Camden.

Morisset and District: G. W. Brown,
"Wonga Hill," Martinsville.

Molong: E. L. M. Parslow, Box 35,
Molong.

Mt. Wilson and Mt. Irvine: G. Val-
der (Jnr.), "Noonoo," Mt. Wilson.

Mudgee: J. V. Rheinberger, Box 72,
Mudgee.

Newcastle Dist.: A. Barrett, Car-
diff.

Niagara Park: R. B. Lowry, "Green
Gables," Niagara Park, via Gosford.
Nepean Dist. F.G.A.: M. G. Walker,
Emu Plains.

Nepean Dist. A. H. and I. Society:
C. H. Fulton, Box 17, Penrith.

Nullamanna: R. E. Gearing, Nulla-
manna.

North Richmond: G. L. Davies,
North Richmond.

Oakville: J. M. Hession, via River-
stone.

Oakdale: H. S. Kingsell, Oakdale.

Orange Prod. Rural Co-op. Soc.
Ltd., Box 41, Orange.

Orangeville: G. N. Mackie, Orange-
ville, via Camden.

Orchard Hills and Dist.: K. Base-
dow, Orchard Hills.

Ourimbah Bulk Loading Rural Co-
op. Soc. Ltd.: H. Freeburn, Ourimbah.

Parkesbourne: G. Brown, Parkes-
bourne.

Pennant Hills: H. B. Chisholm,
New Line-road, West Pennant Hills.

Peats Ridge: A. J. Love, Peats
Ridge, via Gosford.

Penrose Agric. Bureau: C. Hebble-
white, Penrose.

Penrose Fruitgrowers' Rural Co-op.
Soc. Ltd.: J. E. Tickner, Penrose.

Pitt Town: A. B. Sanday, Pitt Town,
via Windsor.

Producers' Co-op. Distrib. Soc. Ltd.
(Fruit Section): Box 86c, P.O., Hay-
market.

Running Stream: E. Bartlett, "Mel-
rose," Capertee.

Saratoga: J. J. Bourke, Saratoga.

Sackville North: C. Noble, Sack-
ville North, via Windsor.

Shipley: D. F. Bullard, Shipley, via
Blackheath.

Singleton: A. J. Taylor, Wark-
worth, via Singleton.

Somersby: D. K. Hutchinson,
Somersby, via Gosford.

St. Ives: A. Love, Horace-street, St.
Ives.

Tahmoor: A. G. Miller, Tahmoor.

Tallong: F. A. Morris, Tallong.

Tenterfield Fruitgrowers' Associa-
tion: H. E. Sommerlad, Box 54, P.O.,
Tenterfield.

Terrigal: T. W. Pedley-Smith,
"Eledo," Terrigal.

Tuggerah: F. C. Fripp, Tuggerah.

Tumbi Umbi and Dist.: A. L. Boh-
ringer, Tumbi Umbi, via Wyong.

Upper Colo: J. E. Forgham, Upper
Colo.

Uralla: H. H. Holloway, Bridge-
street, Arding, via Uralla.

Warkworth: J. Greenhalgh, Wark-
worth, via Singleton.

Warner's Bay Dist.: A. J. Weikle-
john, Speer's Point, via Boolaroo.

Waterview Rural Co-op. Soc. Ltd.:
W. C. Dickinson, Box 5, Young.

Wedderburn: T. Swann.

Wedderburn, via Campbeltown.

West Gosford: K. M. Cohen, Box 48,
P.O., Gosford.

Wilberforce: P. Bushell, Wilber-
force.

Wingello: H. Macquarie, "Tree
Tops," Fruit Section, Wingello.

Wirrimbah Rural Co-op. Soc. Ltd.,

Wirrimbah, via Bendick Murrell.

Woonona and Dist.: F. Turnbull,
York-road, Bellambi.

Wiseman's Ferry and Dist.: C. Riley,
"Wanatta," Wiseman's Ferry.

Wyoming: R. W. Haynes, "Lyn-
hales," Narara.

Wyong Co-op. Citrus Packing House
Ltd., Wyong.

Yarramundi Falls: A. P. Luscombe,
Agnes Banks.

Yass: Yass.

Yarramalong: A. C. Waters, Yarra-
malong.

Yenda Producers' Co-op. Soc. Ltd.,
Box 19, Yenda.

Young Cool Stores Rural Co-op.
Soc. Ltd., Box 5, Young.

Young Fruitgrowers' Co-op. Soc.
Ltd., Box 5, Young.

Young Dist. Producers' Co-op.
Assn. Ltd., Box 5, Young.

N.S.W. Citrus Growers' Defence
Assn., Sec., H. Gordon Bennett, 12
O'Connell-street, Sydney.

VICTORIA.

Bamawm and District: P. Glasson,
"The Palms," Bamawm.

Beaconsfield Upper: C. D. Colles,
Beaconsfield Upper.

Bunyip Orchardists Pty. Ltd.: L.
Thomas, Bunyip.

Campbells Creek: N. O. Robinson,
Campbells Creek.

Croydon and Dist.: B. Cheong, Pine
Lodge, Croydon.

Diamond Creek: T. W. Harrington,
Diamond Creek.

Doncaster: G. S. Grover, Main-road,
Doncaster.

Drouin and Warragul: C. P.
Nobelius, Warragul.

East Burwood Co-op. Fruitgrowers'
Association: G. C. Karnaghan,
Blackburn.

Geelong District's Fruitgrowers'
Association: S. Hartwick, Grovedale,
via Geelong.

Gippsland Fruit Marketing Asso-
ciation: W. H. Carne, "Coniston,"
Pakenham Upper.

Harcourt Fruitgrowers' Progress
Association: The Secretary, Harcourt.

Harcourt Fruit Supply Society Ltd.:
H. V. C. Wilson, Manager, Harcourt.

Harcourt Young Orchardists Club:
F. L. Bertuch, Harcourt.

Mt. Waverley: D. Peck, Tally Ho.

Narre Warren: The Secretary,
Narre Warren.

Northern Victoria: S. P. Conish,
Ardmona.

Pakenham Upper Fruitgrowers' &
Progress Association: W. H. Carne,
"Coniston," Pakenham Upper.

Panton Hill and District: C. T. Harris, Kangaroo Grounds.

Peninsula Co-op. Fruitgrowers' Association Ltd.: W. H. Barnes, Somerville.

Pomonal: H. Anderson, Pomonal.

Portland Hort. & Agric. Society: R. D. Patton, Portland.

Quantong: C. H. Jost, Manager, Quantong.

Red Hill Fruitgrowers' Association: H. Ross, Merricks North.

Red Hill & District Agric. & Hort. Society: J. E. Holland, Red Hill.

Shepparton: Victor E. Mills, Shepparton East.

Somerville Fruitgrowers & Hort. Association: C. H. Jenkins, Bunjywitta, Pearcedale.

Southern Fruitgrowers' Association: J. W. Aspinall, Bishop-street, Box Hill.

Southern Victoria Pear Packing Co. Pty. Ltd.: F. Moore, Managing Director, Blackburn.

Strathfieldsaye: A. Somerville, Strathfieldsaye.

The Orchardists & Fruit Cool Stores Association of Victoria: Wm. A. Stewart, 34 Queen-street, Melbourne, C.1.

Tyabb: H. Denham, Tyabb.

Victorian Fruit Marketing Association: R. E. Boardman, 528 Collins-street, Melbourne, C.1.

Wallington: W. H. Williams, Wallington.

Dimboola Tomato Growers' Association: The Secretary, Dimboola.

Koondrook & Barham Tomato Growers' Association: H. Beet, Box 44, Barham, N.S.W.

Portland Tomato Growers' Association: M. Barrett, London House, Portland.

Table Grapes Association: W. F. Flattlet, Merbein West.

United Berry Growers' Association: D. Campbell, Wandin.

Victorian Central Citrus Association Pty. Ltd.: A. W. Schwennesen, General Manager, 422 Collins-street, Melbourne, C.1.

Nyah-Woornen Dried Fruits Enquiry Committee: R. C. Polkinghorne, Woornen.

Northern Victoria.

Northern Victoria Fruitgrowers' Association: Secretary, S. P. Cornish, Ardmona.

Affiliated Associations and Secretaries.

Ardmona: S. P. Cornish, Ardmona.

Bamawm Dist.: P. Glasson, Bamawm.

Kyabram: G. F. Markham, Kyabram.

Lancaster: G. McMaster-Smith, Lancaster.

Merrigum: S. Youlden, Merrigum.

Shepparton: V. E. Mills, Shepparton East.

Tatura: J. G. S. Rose, Tatura.

Toolamba: J. Agnew, Mooroopna.

Tongala: D. E. Barry Wood, Tongala East.

Southern Fruitgrowers' Association.

Secretary: J. W. Aspinall, 2 Bishop-street, Box Hill.

Affiliated Associations and Secretaries.

Doncaster: G. S. Grover, Doncaster.

East Burwood: G. C. Karnaghan, Blackburn.

Diamond Creek: T. Harrington, Diamond Creek.

Geelong: S. Hardwick, Grovedale, via Geelong.

VICTORIAN CENTRAL CITRUS ASSOCIATION PTY. LTD.

422 Collins-street, Melbourne; General Manager, A. W. Schwennesen.

Branches and Secretaries.

Murrabit District Citrus Assn.: J. H. Morton, Gonn Crossing, via Kerang.

Bamawm Citrus Assn. Ltd.: W. Chapman, Lockington.

Lake Kangaroo Packing Co. Pty. Ltd.: H. S. Argyle, Mystic Park.

Mildura & Districts V.C.C.A. Executive: A. E. Cameron, Box 194, Red Cliffs.

Mildura Citrus Assn.: H. Wormwell, 15th-street, Irymple.

Merbein Citrus Growers' Assn.: J. A. Rickard, Merbein.

Shepparton Irrigators' Assn.: V. S. Mills, Shepparton.

Wangaratta Citrus Assn.: J. P. Larkings, Wangaratta.

Nanneella Citrus Assn.: J. Logan, Nanneella.

Red Cliffs Citrus Assn.: R. D. Hollins, Red Cliffs.

Long Lake Citrus Assn.: C. V. Rees, "Bloomfields," Lake Boga.

Curlwaa Co-op. Packing Society Ltd.: L. R. Strother, Curlwaa, N.S.W.

Cobram Fruit Packing Co. Pty. Ltd.: L. F. Edwards, Cobram.

Cain, W. N., Madowla Park, Picola.

Rupert J. Watson, Perricoota, via Moama, N.S.W.

P. Rossiter, Ngawe, Cobram.

COOL STORES ASSOCIATIONS.

The Orchardists' and Fruit Cool Stores Association of Victoria.—Secretary, W. A. Stewart, 34 Queen-street, Melbourne.

Affiliated Stores and Secretaries, as under:

Interstate—

Batlow, N.S.W.: T. A. Hudson, Batlow, N.S.W.

Bender & Co. Pty. Ltd.: A. V. Billett, 100 Elizabeth-street, Launceston, Tasmania.

Victoria—

Ardmona Fruit Products Co-op. Co. Ltd.: A. T. Shoesmith, Mooroopna.

Blackburn Cool Stores Pty. Ltd.: A. J. Noonan, Railway-road, Blackburn.

East Burwood Co-op. Cool Stores Society Ltd.: C. G. Karnaghan, 15 Blackburn-road, Blackburn.

Bunyip Orchardists Pty. Ltd.: L. Thomas, Bunyip.

Croydon Cool Stores: Robt. Langley, P.O., Kilsyth.

Diamond Creek Cool Stores Pty. Ltd.: R. M. Finlay, Diamond Creek.

East Doncaster Cool Stores Pty. Ltd.: W. Johnston, Cottage-street, Blackburn.

West Doncaster Cool Storage Co. Pty. Ltd.: A. T. Tully, Main-road, Doncaster.

Harcourt Co-op. Cool Stores Ltd.: H. M. McLean, Harcourt.

Hastings & District Co-op. Cool Stores Ltd.: G. H. Sprague, Hastings.

Kyabram Co-op. Fruit Preserving Co. Ltd.: C. P. Crichton, Kyabram.

Mount Waverley Co-op. Cool Stores Society Ltd.: David Peck, Tally Ho.

Orchardists' Cool Stores Co. Ltd.: G. S. Grover, Main-road, Doncaster.

Pakenham Cool Stores Pty. Ltd.: H. Hamilton, 271 Collins-street, Melbourne.

Portland Cool Store & Packing shed Pty. Ltd.: E. W. Hedditch, Gorae, via Portland.

Red Hill Co-op. Cool Stores Society Ltd.: T. E. Butler, 486 Collins-street, Melbourne.

Ringwood Co-op. Cool Stores Society Ltd.: J. G. Aird, Ringwood.

Shepparton Fruit Preserving Co. Ltd.: F. J. Pick, Shepparton.

Somerville Co-op. Cool Stores Society Ltd.: T. E. Butler, 486 Collins-street, Melbourne.

Tyabb Co-op. Trading & Cool Stores Ltd.: Miss H. A. Forstal, Tyabb.

Wantirna Co-op. Cool Stores Society Ltd.: F. J. Byrne, Boronia-road, Bayswater.

FRUIT WORLD ANNUAL

Private Stores—

Box Hill Ice & Cold Storage Pty. Ltd.: C. G. Gill, Springfield-road, Blackburn.

John Brunning & Sons, Somerville.
F. W. Cameron, Main-road, Doncaster.

Devon Orchards Pty. Ltd.: G. H. Jarman, Red Hill.

Elinora Orchards Pty. Ltd.: A. P. Scott, Wheelers Hill.

Graceburn Valley: A. E. Hocking, 31 Queen-street, Melbourne.

R. E. Haysey, "Airedale," Narre Warren North.

Heatherlea: The Aust. Fruit & Produce Co. Pty. Ltd., Devon-street, Croydon.

V. Lawford, Springfield-road, Blackburn.

Lechte Bros.: High St.-road, Mount Waverley.

S. J. Perry & Co.: K. W. Weeding, 364 Little Collins-street, Melbourne.

Mrs. A. Petty, "Kaven," Main-road, Doncaster.

F. Petty, "Tacoma," Park-road, Mitcham.

F. C. Pyke, Heatherdale-road, Ringwood.

W. C. Thomas & Sons Pty. Ltd., 55 William-street, Melbourne.

August Thiele, Main-road, Doncaster.

J. J. Tully, Victoria-street, Doncaster.

A. E. Ireland, Beverley-road, Doncaster.

W. Ireland, Gillies-street, Mitcham.

Thos. Dobson & Sons, Ringwood-road, Ferntree Gully.

H. H. Unthank, Hastings.

SOUTH AUSTRALIA.

Murray Citrus Growers' Association.

The Murray Citrus Growers' Co-op. Association (Australia) Ltd., has its headquarters at 87 Brookman Building, Grenfell-street, Adelaide.

Central Executive, 1939.

President: Mr. A. P. Wishart, (Berri).

Members: Messrs. K. Dunstan and H. J. Heinemann (Waikerie); C. Plush and C. M. Cooper (Berri); J. Price and H. C. Carne (Renmark); F. E. Gibson (Moorook and Kingston); K. F. Dowding (Mypolonga); J. R. Jemison (Ramco); R. B. Sleth (Cadell); and H. R. Carter (Barmera).

Management Committee, 1939.

Chairman: Mr. A. P. Wishart.

Members: Messrs. K. Dunstan, H. C. Carne, K. F. Dowding and C. Plush.

District Committees are established at Waikerie, Renmark, Berri, Mypolonga, Murray View, Moorook and Kingston, Ramco, Cadell and Barmera.

Market Representative in Great Britain: Mr. N. H. Underwood.

The General Secretary is Mr. J. J. Medley.

S.A. Fruitgrowers' and Market Gardeners' Association, A. Stewart, Secretary, 288A Rundle-street, Adelaide, Box 43, P.O., Rundle-street.

Affiliated Bodies—

Barossa Fruitgrowers' Assn., Sec., Mr. A. J. Chapman, Nuriootpa.

Fruitgrowers' and Market Gardeners Society Ltd.

Torrens Valley Citrus Growers' Co-operative Society Ltd.

WESTERN AUSTRALIA.

W.A. Fruitgrowers' Assn.: Joint Secretaries: H. W. Soothill, c/o Producers Markets Ltd., Perth, and B. Hickling, Mt. Barker.

W.A. Fruit Shippers Committee: Sec., C. H. Merry, Commercial Union Chambers, Perth.

Affiliated Associations.

Albany: W. Gibb.

Balingup: Fred Hawter.

Bridgetown: Doust, R. E.

Boyup Brook: E. A. Miller.

Central Darling Range: H. White-side, Kalamunda.

Capel: Turner, T. H.

Chittering District: O'Neill, C., Lower Chittering.

Donnybrook & Dist.: Moore, C. R. Brookhampton.

Denmark: Kingston, W. J.

Dwellingup: H. Birmingham.

Eastern Hills: A. S. Forsyth,

Parkerville.

Harvey: C. M. Clifton.

Manjimup: R. Wheeler.

Mt. Barker: Hickling, B.

Northern District Council: Soot-

hill, H. W., Box N1041, Perth.

South Suburban: E. H. Brown, Box

41, Kelmscott.

Spearwood Fruitgrowers' & Market Gardeners' Assn.: Mr. T. Connolly, c/o R. Piercy, 57 Henderson-street, Fremantle.

TASMANIA.

State Fruit Board: A. J. Honey, Secretary, City Mutual Building, Hobart. Tel. Hobart 4857 (after hours 5677).

Special issue of "The
FRUIT WORLD," January, 1940.

Small Fruits Advisory Committee, A. J. Honey, Sec., City Mutual Building, Hobart. Tel. 4857.

Fruitgrowers' Associations.

Port Huon Fruitgrowers' Co-operative Association Ltd.: General manager, J. P. Piggott, Davey-street, Hobart.

Bagdad Fruitgrowers' Co-operative Association: A. Gillow, Bagdad.

Tamar Farmers and Fruitgrowers' Association: E. O. Lucas, Loira, West Tamar.

Tamar Valley Co-operative Company Ltd.: L. S. Taylor, Exeter.

Clarence Point Co-operative Orchard Company: Col. Oliver, Clarence Point.

Derwent Valley Fruitgrowers' Co-operative Co.: H. Morgan, New Norfolk.

Spreyton Fruitgrowers' Co-operative Company: A. Heath, Spreyton.

Tasmanian Farmers' Stockowners and Orchardists' Association: A. J. Honey, City Mutual Building, Hobart.

Sunshine Fruit Standardised Fruit Coy. Ltd., Middleton.

QUEENSLAND.

Committee of Direction of Fruit Marketing, Turbot-street, Brisbane, General Manager, B. Flewell-Smith; Sub-Manager, W. Ellison.

Affiliated registered Associations, with names and addresses of secretaries, are as follows:—

Branches of the Committee of Direction:

Melbourne Office: McRostie & Growers Pty. Ltd., Box 353 C, G.P.O., Melbourne.

Sydney Office: B. Cox, Box 176, Haymarket P.O., Sydney.

Adelaide Office: R. G. Bartram, Box 43, G.P.O., Adelaide.

Rockhampton Office: S. McCullough, Box 313, P.O., Rockhampton.

Bowen Office: R. A. Kelsey, Box 171, P.O., Bowen.

Townsville Office: J. Brown, Flinders-street, Townsville.

Mackay Office: C. A. Perkins, Box 174, P.O., Mackay.

Amamoor: F. Townsend, Amamoor.

Ambrose: R. H. Coulter, Ambrose.

Aspley: W. F. King, Aspley.

Austinville: L. Pritchard, Austinville, Mudgeeraba.

Bald Hills: I. J. Williams (Chairman), Bald Hills.

Brackenridge: J. F. Gaskell, Brackenridge, via Sandgate.

Brookfield: A. McKay, Brookfield.

Byfield: J. Carroll, Byfield, via Yeppoon.

Beerburum: W. Dickerson, Beerburum.

Birkdale: G. Randall (Chairman), Birkdale.

Buderim Mt.: R. L. Miller, Buderim Mt.

Burrum District Citrus Assoc., R. G. Reaney, Howard.

Burrum L.P.A.: H. G. Rowston, Tornanlea.

Bowen Dist.: G. Pott, Bowen.

Bouldercombe: P. Dwyer, Bouldercombe, via Rockhampton.

Bowling Green: F. Beaker, Aramara.

Baffle Creek: F. Kleinschmidt, Rosedale, N.C.L.

Caboolture: H. Goeldner, Caboolture.

Carbrook: E. H. R. Fabian, Carbrook-road, Beenleigh.

Cedar Creek: A. J. Marks, Closeburn.

Cleveland: C. Perske, Cleveland.

Cochin Creek: R. McDowall, Beerwah.

Cooloolabin: F. I. Peachey, Cooloolabin, via Yandina.

Cooran-Kin Kin: H. McDonald, Cooran.

Cooroy: A. Gordon, Cooroy.

Currambin: G. G. Greaves, Currambin.

Dagun: P. Hicks, Dagun.

Dundowran: J. R. Stocks, Dundowran, Nikenbah.

Eight Mile Plains: E. J. Hampson, Eight Mile Plains.

Elimbah: E. Broughton, Elimbah.

Eudio: T. Ellis, Eudio.

Eumundi: A. W. Chapman, Eumundi.

Gympie: M. Buchanan, Goomboorian, via Gympie.

North Deep Creek and Corella: J. Colley, Tamaree.

Mary's Creek: J. P. Jackson, Mary's Creek, via Gympie.

Cedar Pocket: F. W. Johns, Cedar Pocket, via Gympie.

Chatsworth: T. P. Reynolds, Chatsworth, via Gympie.

Glastonbury: B. C. Betts, Glastonbury, via Gympie.

Goomboorian: W. Williams, Goomboorian, via Gympie.

Mooloo: W. Kirkwood, Junr., Mooloo, via Gympie.

Pie Creek: S. Adcock, Pie Creek, via Gympie.

Lower Goomboorian: G. E. Elliott, Lower Goomboorian, via Gympie.

Upper Veteran: V. B. Gray, Upper Veteran-road, Gympie.

Scrubby Creek: J. P. Carey, Scrubby Creek, via Gympie.

Gayndah and Dist.: J. C. Aeworth Box 38, Gayndah.

United Fruitgrowers Ltd.: A. Palk, Glasshouse Mts.

Horseshoe Bay F.G.A.: W. Townsend, Horseshoe Bay, via Townsville.

Howard: E. Richards, Howard.

Jubilee Pocket: J. Campbell, Jubilee Pocket, Cannon Valley, Prosperpine.

Kallangur: J. A. Storey, Kallangur, near Petrie.

Kandanga: K. L. Viles, Kandanga.

Kennedy Dist.: J. C. Evans, Carruchan, Kennedy, N.Q.

Kiamba: P. T. Smith, Kiamba, via Yandina.

Lagoon Pocket: J. Kernke, Lagoon Pocket.

Landsborough: F. J. Salmon, Landsborough.

Lower Burdekin: T. Breen, Box 237, P.O., Ayr.

Mackay Dist.: A. Gibson, Box 120, Mackay.

Macleay Island: W. J. Seymour, Macleay Island, via Redland Bay.

Meeandah: P. Adsett, P.O., Eagle Farm.

Moggill: R. Westaway, Junr., Moggill.

Montville: J. M. Allen, Montville.

Mt. Cotton: H. G. Holzapfel, Mt. Cotton.

Mt. Mermaid: A. R. Vaisey, Upper Brookfield.

Mt. Mee West: J. H. Jones, Mt. Mee West, via D'Aguilar.

Marmor: W. J. Sands, Marmor.

Nambour: C. M. Bambling, Nambour.

Flaxton: J. R. Perkins, Flaxton, via Palmwoods.

Mapleton: Miss M. Birmingham, Mapleton.

Nerang: Post to Secretary, Nerang.

North Arm: H. Mulcachy, North Arm.

Ormiston: T. R. S. Fox, Ormiston.

Oxenford: A. K. G. Watt, Upper Coomera.

Ormeau and Near Sth. Coast: P. N. Eichman, Yatala.

Palmwoods: J. Biddulph, Palmwoods.

Pomona: H. V. Wood, Pomona.

Redland Bay: A. Prince, Redland Bay.

Rochedale: N. Stewart, Rochedale, Eight Mile Plains.

Russell Island: D. MacInnes, Russell Is., via Redland Bay.

Sarina: H. Jacobsen, Sarina, N.Q.

South Tamborine: E. J. Jenyns, North Tamborine.

Sunnybank: H. Thomas, Sunnybank.

Slacks Creek and Dist.: T. H. Dennis, Daisy Hill, Loganlea.

Tanby: R. F. Strange, Tanby.

Tamborine: H. Curtis, North Tamborine.

Tinana: E. Copley, Tinana, via Maryborough.

Takura: J. H. Mungomery, Takura.

Upper Brookfield: J. Phillips, Upper Brookfield.

Upper Kedron: E. J. Pickering, Ferny Grove.

Upper Mudgeeraba: R. Rathbone, Upper Mudgeeraba.

Valdora: J. Leach, Valdora, via Yandina.

Victoria Point: R. Bach, Victoria Point.

Villeneuve: E. Axelsen, Villeneuve, Kilcoy L.

Wamuran & Dist.: H. S. Franks.

West Burleigh & Dist.: E. T. Thompson, West Burleigh.

Woodford: A. J. Crocker, Woodford.

Woombye: E. E. McNall, Woombye.

Yarwun-Targinnie: L. M. Ferguson, Yarwun.

Yandina & Dist.: A. E. Haddrell, Yandina.

Yeppoon: G. Mitchell, Yeppoon.

(All Deciduous Associations.)

Stanthorpe L.P.A.'s.

Amiens: O. T. Jones, Amiens.

Appleton: H. G. Ludlow, Glen Niven.

Balandean: W. G. Newman.

Bapaume: H. W. Bloxham.

Broadwater: M. Schneider, Box 93, Stanthorpe.

Cottonvale: A. E. Fordyce.

Dalveen: A. G. White, Dalveen.

Eukey: L. G. Birch, Eukey.

Glen Aplin: N. A. Collins.

Greenlands: J. Wylie, Spring Creek, Stanthorpe.

Mt. Tully: V. C. Sheppard.

Pioneers: D. Ryan, Eukey, via Stanthorpe.

Pozieres: A. E. Pierce, Pozieres.

Severnlea: R. J. Bowden, Severnlea.

Stanthorpe: J. C. Whitehead, Box 104.

The Summit: A. D. Philp.

Thorndale: L. Smith, Thorndale, via Stanthorpe.

Thulimbah: L. C. Evans.

Wyberba: J. R. Hickling, "Monrovia," Bald Mt., Wyberba, Southern Railway.

DRIED FRUIT PACKING HOUSES 1939

Victoria.

Aden Packing Co., Box 5, Irymple.
Arnold, W., C/o Mailman, Rochester.
Aurora Packing Co. Pty. Ltd., No. 1 House, Irymple.
Aurora Packing Co. Pty. Ltd., No. 2 House, Irymple.
Aurora Packing Co. Pty. Ltd., Merbein.
Aurora Packing Co. Pty. Ltd., Red Cliffs.
Australasian Jam Co. Pty. Ltd., 1 Garden-street, South Yarra, S.E.1.
Australasian Jam Co. Pty. Ltd., 1 Bridge-road, Richmond, E.1.
Bamawm Citrus Association Ltd., Lockington.
Blake, W. A., Pty. Ltd., 252 City-road, South Melbourne, S.C.5.
Chequer, W., Quantong, via Horsham.
Co-operated Dried Fruits Sales Pty. Ltd., 16-24 Jeffcott street, Melbourne, C.1.
Desmond, J. J., Fairy Dell, via Rochester.
G.W.S. Co. Pty. Ltd., 264 Lt. Collins-street, Melbourne
Hungerford, E. & Sons, Piangil.
Hydro Vacuum Fumigation Co. Ltd., The, 422 Collins street, Melbourne, C.1.
Irymple Packing Pty. Ltd., Irymple.
Irymple Packing Pty. Ltd., Merbein.
Jameson, C., Shepparton East.
Martin, C., Bruarong, via Yackandandah.
Mildura Co-operative Fruit Co. Ltd., Irymple.
Mildura Co-operative Fruit Co. Ltd., Merbein.
Mildura Co-operative Fruit Co. Ltd., Mildura.
McAlpine, J. & K., Pty. Ltd., Box 15, Nyah.
Niemann & Derrick, Murrarwee, via Swan Hill.
Nyah Fruitgrowers' Co-operative Co. Ltd., Nyahwest.
Nyah Fruitgrowers' Co-operative Co. Ltd., Vinifera.
Overall, H., Quantong, via Horsham.
Red Cliffs Co-operative Packing Co. Ltd., No. 1 House, Red Cliffs.
Red Cliffs Co-operative Packing Co. Ltd., No. 2 House, Red Cliffs.
Sarnia Packing Pty. Ltd., Box 271, Mildura.
Sarnia Packing Pty. Ltd. (late Swallow & Ariell), Box 271, Mildura.
Sterilizers Pty. Ltd., 194 Kerr-street, Fitzroy, N.E.
Tandaco Packing Pty. Ltd., Nyahwest.
Thwaites, J., Box 49, Nyah.
Woods, R. K., Willowmere Packing House, Kyabram.
Woorinen Fruitgrowers' Co-operative Co. Ltd., Woorinen South.
Woorinen Fruitgrowers' Co-operative Co. Ltd., Tresco.

New South Wales.

Billing, U.S.; Tapaulin, via Euston.
Brett Bros., Mt. Dispersion.
Coomealla Packers Pty. Ltd., Dareton.
Ellis, T. N., Sydney.
Golden West Fruit Packing Co. Pty. Ltd., Alexandria.
Granger, J. C., Kingsvale.
Griffith Producers' Co-operative Co. Ltd., Griffith.
Johnson, W. H., & Co. Pty. Ltd., Waterloo.
Leeton Packing Co. Pty. Ltd., Banna-avenue, Griffith.
Leeton Packing Co. Pty. Ltd., Acacia-avenue, Leeton.
Mildura Co-operative Fruit Co. Ltd., Curlwaa.
Mildura Co-operative Fruit Co. Ltd., Pomona.

Murrumbidgee Dried Fruits Sales, Sydney.

Neville, Guy, Griffith.
Producers' Packing Co. Ltd., Sydney.
Producers' Packing Co. Ltd., Leeton.
Riverina Packing Co., Griffith.
Riverina Welfare Farm for Boys, Yanco.
Sainty, J., Crow's Nest.
Sharrock Bros., Goodnight.
Walster, W. D., Junee.
Yenda Packing Co., Yenda.
Young District Producers' Co-op. Association Ltd., Young.

South Australia.

Angaston Fruitgrowers' Co-op. Society Ltd., Angaston.
Barmera Co-operative Packing Co. Ltd., Barmera.
Beilby, S. O., Ltd., Adelaide.
Bell, R. G., McLaren Vale.
Berri Co-operative Packing Union Ltd., Berri.
Brooker, J., & Sons Ltd., Croydon.
Cadell, Fruitgrowers' Ltd., Cadell.
Chateau, Mildura & Olivewood Pty. Ltd., Renmark.
Cole & Woodham Ltd., Renmark.
Grove & Newcombe Ltd., Port Adelaide.
Crowe & Newcombe Ltd., Angaston.
Crowe & Newcombe Ltd., Barmera.
Crowe & Newcombe Ltd., Monash.
Crowe & Newcombe Ltd., Renmark.
Hart Manufacturing Co., Unley.
Howard, A. H., Langhorne's Creek.
Howard, E. D., Langhorne's Creek.
Jones, W. O., Waikerie.
Kingston Co-op. Fruit Packing Union Ltd., Kingston-on-Murray.
Mattiske, J. W., dec. Estate of, Angaston.
Media Irrigation Pty. Ltd., Loxton.
Moorook Co-operators Ltd., Moorook.
Mypolonga Co-operative Society Ltd., Mypolonga.
McLaren Vale Fruitpackers Ltd., McLaren Vale.
Plush, S., Nuriootpa.
Price, J. H. M., Renmark.
Pyap Co-operative Society Ltd., Pyap.
Ramco Co-operative Ltd., Ramco.
Redman, John & Sons, Coonawarra.
Renmark Fruitgrowers' Co-operative Ltd., Renmark.
Robson, Jarvis & Co., Hectorville.
Saines, G. R., Renmark.
Sherwood Irrigation Co., Loxton.
S.A. Fruitgrowers' Co-operative Soc. Ltd., St. Peters.
Stanley Dried Fruits Association Ltd., Clare.
Stevens, F. H., Renmark.
Thorn, A., Angaston.
Waikerie Co-operative Fruit Co. Ltd., Waikerie.
Wood, G., Son & Co., Port Adelaide.
Wood, Son, Seary Ltd., Berri.
Wood, Son, Seary Ltd., Renmark.

West Australia.

Swan Settlers Co-op. Association Ltd., Herne Hill.
Foster White & Co., West Swan.
Copleys Bank Ltd., Upper Swan.
Watt, A. E., Greenmount.
Harrison, E., Millendon.
Cox Bros., Coopul.